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PART I.
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ART. V.—*Observations upon Disease of the Prostate Gland.* By the late SAMUEL WILMOT, M. D.; edited by his Son, SAMUEL G. WILMOT, M. D., one of the Surgeons to Dr. Steevens's Hospital.

WERE we to measure the weight to be attached to the diseases of a given part or organ in the body, or to estimate, *a priori*, the probable evils to the system resulting from them, by the importance of the function such part or organ performs in the animal economy, we would frequently be led into very serious error. This observation, to the truth of which every reflecting practitioner will at once subscribe, applies with peculiar force to diseases of the prostate gland. This little organ, insignificant in regard of its office, and worthy of not much attention, except to the anatomist, becomes, in consequence of the morbid changes to which it is liable, an object of the greatest interest to the pathologist, of anxious responsibility to

the surgeon, and a source of extreme distress, mental as well as bodily, to the afflicted patient. A sufferer who will maintain a cheerful, nay, an almost happy state of mind, under the most intense bodily pain, in connexion with extensive irremediable disease elsewhere, will, in protracted aggravated prostatic disease, be reduced to a condition of mental prostration and depression truly deplorable, and even sometimes bordering on fatuity. The physical condition of the patient is in no way better than the picture drawn of his mental wretchedness. The prostate gland, encircling as it does the neck of the bladder, will, when affected with even the most common change to which it is subject, become successively—*pari passu* with its progress—the cause, first, of irritability of the bladder; secondly, of difficulty in expelling its contents; thirdly, of retention; and lastly, giving origin to a train of urinary miseries similar to those which occur in old and neglected strictures of the urethra. The morbid alterations to which the gland is liable are many and various:—acute and chronic inflammation, abscesses, hypertrophy, malignant degeneration, and alteration of its secretion. For the present, however, I purpose to confine my remarks to that disease termed the chronic enlargement of the organ. Now, prior to the description of this disease, a few observations upon the anatomy of the prostate in early life, before it has been overtaken by pathological change, will be necessary for junior readers. This organ is placed around the neck of the bladder, and includes about one inch and a quarter of the urethra; in shape and size it is compared to a chesnut; its structure is composed of a congeries of follicles, bound together by a dense fibrous capsule, which gives to the organ a firm resisting feel; the cells open by numerous small ducts into the sinus which lies on each side of the veru montanum. From the position of this part, it is clear that a very slight enlargement of, or change of figure in it, partially or completely, must more or less interfere with the due performance of the bladder's office.

It has been stated that few men arrive at the meridian of life whose prostate gland has not undergone some modification in size, shape, or structure; and to the truth of this general proposition my own experience would certainly give assent. Why it should undergo these changes almost uniformly at this particular period of man's existence, must, with the other senile changes, remain a problem unsolved, until the veil that shrouds our understanding be removed by the advent of an improved pathology, based upon more enlightened physiology. A question arising from the proposition advanced of the universality of these morbid conditions of the prostate gland suggests itself to every reflecting mind:—why symptoms of urinary irritation and impediment are not invariably met with at the period of life specified? To this it is not easy to find an answer. It is true, enlargement of the organ may occur in a direction which will not make any incursion upon the canal of the urethra, or the neck of the bladder. And if mere condensation of tissue, without increase of size, be the change which takes place, the bladder may discharge its functions with little interference. Generally, however, I think the circumstance of a diseased prostate giving manifestation to its existence or not, depends upon whether the local irritability be excessive or deficient. Similar conditions, in a constitutional point of view, regulate, we know, the degree of disturbance set up in the system in consequence of an injury, or some local disease. Now, as in one individual the slightest local change or impression will kindle high constitutional derangement, while in another the system seems to take little, if any cognizance of considerable local lesion, so an organ or part in one instance will submit, without evidencing disturbance, to circumstances which in another would give rise to serious inconvenience and unpleasant results. In illustration of this observation, by analogy, we may point to the stomach. Here we will see that in tumours pressing upon or otherwise interfering with the pylorus, the extent to which the viscus has its function impaired bears no direct proportion to

the degree of disease or its apparent power to incommode it by position or other causes. The same holds good with stone in the bladder and many other cases. And by this same view we find, I think, a not irrational answer to the question above propounded, and an explanation of the fact that there is frequently a disproportion observed between the prostatic disease and the urinary annoyance the result. Increase of volume, the effect of simple hypertrophy, which is attended by much vascular turgescence, is the pathological condition which constitutes the disease called chronic enlargement of the prostate gland; and it is a change effected in obedience to one of the senile laws that regulate the human mechanism. This morbid alteration is generally accompanied with induration; more rarely the gland retains its natural degree of consistence, and in a few instances it has been found even softer. Sometimes the tissues of the part assume a cartilaginous hardness, and present a nodulated feel. This condition it is that gave rise to the imposition of the improper title "schirrus" upon this affection. Hypertrophy, according to Andral's views, consists in an increased number of the molecules of the tissues of the part engaged, depending either upon excessive action of the assimilative powers, or upon deficient energy in the process of disassimilation, by which the balance between these two operations, which keeps at a definite limit all the parts and organs in the body, is destroyed.

Enlargement of the prostate gland may be limited or unlimited, according as one, two, or all the lobes of it are engaged. The left lateral lobe is the one most usually the seat of this morbid change. When it enlarges, the same side of the urethra is, as a necessary consequence, displaced, presenting a convexity which looks to the opposite side, and is also elongated. In the introduction of an instrument in such a case, the catheterist must recollect, when he arrives at the obstruction, to incline its point to the right side. When the right lateral lobe undergoes increase of volume, a similar change takes place in

the urethra on that side, and the catheter must, in the introduction, be directed to the left side. When both lateral lobes are increased in size, the prostatic portion of the urethra is rendered in proportion deep and narrow. If they be equally enlarged, the passage will be straight, and a small instrument may pass with ease; if there be inequality in their proportions, the canal must, to a certain extent, be tortuous, and some manœuvring will be required to gain entrance for an instrument into the bladder. Delicacy of touch, prudence, patience, and self-possession, are requisites to guide the operator's hand, and to insure success in these cases. When the third or middle lobe is enlarged, there is generally considerable difficulty in expelling the urine, and frequently much irritation of the organ; while the degree of difficulty in micturition, and the facility with which an instrument is passed, depends upon whether the tumour formed by the lobe be fixed or moveable. In the case of a gentleman whom I attended for diseased prostate, he was not able to pass a drop of urine by his own unaided efforts, still I never experienced the least difficulty in introducing a catheter; and this circumstance, as proved by *post mortem* examination, was due to mobility of the middle lobe, which caused it to act like a valve. When the bladder contracted to expel its contents, the urine pushed it forward against the orifice of the urethra, while an instrument passed from without readily pressed it back and surmounted the eminence. When the prominence caused by the enlargement of the middle lobe is fixed, which is usually the case, the surgeon has often much difficulty to encounter in passing a catheter. Here the great object should be to keep the extremity of the instrument close to the arch of the pubis in the first act of depressing the handle; at the same time making pressure on the instrument in the perinæum is very often followed with success.

In some instances a dilatation of the urethra takes place on each side of the diseased lobe, thus forming two lateral sinuses; in such case a small catheter may, by dexterous manipulation,

find its way into the bladder. When the three lobes of the prostate gland are simultaneously enlarged, the difficulties to the surgeon, when called upon to relieve a retention of urine, are generally trebled; and should the lateral lobes be at the same time unequal in their size, or nodulated upon their urethral surface, the prostatic portion of the canal does then indeed present a passage to steer through which the catheterist requires no small share of dexterity and of educated touch. As no medicine will be of the least avail in relieving retention of urine arising from prostatic disease, the surgeon must depend entirely upon the employment of the catheter; his position, therefore, becomes most responsible and arduous.

The instrument best suited in general for introduction in cases of prostatic disease, is a moderate-sized gum-elastic catheter, longer than usual, and I prefer to use it without a stillet if possible. Should it, however, be the third lobe which is enlarged, then the addition of the stillet is usually necessary, and we must set the extremity of the instrument to as great a curve upwards as the urethra will allow. This being done, when we arrive at the obstacle we must slowly, steadily, and gently depress the catheter, pressing upon it at the same time through the perinæum. Should this fail after two or three attempts, let us withdraw the stillet a short distance, which expedient will have the effect of elevating the instrument's point, and it will generally glide over the prominence. If we be foiled in this also, the index finger of the left hand should be introduced into the rectum, and the instrument be thus attempted to be raised over the opposing eminence. All these manœuvres will frequently fail, and the success which has generally attended our catheterism will appear to have utterly forsaken us; but on no account let our disappointment and vexation induce us to exercise unwarrantable force in the accomplishment of our object. We must make repeated trials, adopting in succession the different plans already specified, and, after steady perseverance, we will often

succeed in the most unexpected and gratifying manner. In the passage of a metallic catheter in cases of enlarged prostate (and this kind of instrument will often be easily introduced when others have failed), we must regulate its movements according to the rules before laid down; but here, while depressing the instrument, a phenomenon often occurs which to the experienced hand is a conclusive announcement that it has passed the obstacle, and is fast taking the proper road into the bladder. I allude to the sensation as if the instrument were, by some suction-power of the bladder, drawn from the hand of the surgeon. Cases will occur in which all our best directed and most judicious efforts to pass a catheter will signally fail. What then is to be done? The urine is accumulating, and a speedy evacuation of the bladder is imperatively demanded. In this dilemma the surgeon must choose one of two expedients,—either to force a passage through the prostate, or to tap the bladder above the pubis. As to the propriety of the first mode of gaining access to the bladder, surgeons are divided in their opinion; and the arguments of those who contend that the practice is improper are based upon the grounds:—First, that the patient can never afterwards pass urine without the assistance of an instrument; second, that there is extreme risk from hemorrhage. That the first of these objections does not invariably obtain, is proved by the following case.

Mr. ———, a man between fifty and sixty years of age, residing in England, had some difficulty in making water in consequence of an enlarged prostate gland. After having drunk too freely one evening he was seized with retention of urine. The practitioner called in to relieve him, with much difficulty, and by the employment of great force, succeeded in drawing off the urine. The patient continued well for four years, during which time he never needed the introduction of a catheter. Having come over to Dublin on business, he fell in with an old friend, and again exceeded the proper limits in

the amount of his wine, the result of which was an attack of retention of urine. I was called to see him, and found not the least difficulty in emptying the bladder. Not long afterwards he was seized with a severe attack of pneumonia, of which he died; and it was kindly permitted me to examine the prostate gland. I found a passage through the middle lobe; it was in caliber about the thickness of No. 8 catheter, and was lined with mucous membrane.

The second is a very valid objection. It is not, however, always necessary to wound the gland in order to bring on hemorrhage. I have witnessed it very smart where the catheter was handled with extreme delicacy and gentleness. Were I obliged in a particular case to penetrate the prostate in order to draw off the urine, I would leave the instrument in the bladder for some time, by which means the chance of hemorrhage must be greatly diminished, if it be not altogether prevented. We sometimes meet with hemorrhage from the prostate occurring spontaneously, and after death the cause is discovered to be ulceration of its surface, or a granular condition accompanied with much vascularity. When the organ is the seat of fungus hæmatodes, which it sometimes, though very rarely, is, the bleeding takes place often to exsanguification. I saw recently a case of this kind in a gentleman aged 60. Bleeding from the prostate, whatever may be the cause, always deserves serious attention. Sometimes it will stop spontaneously; at other times the ordinary treatment, absolute rest, cold to the perinæum and region of the bladder, cupping over the sacrum, low diet, and purgation, will arrest it: often, however, it is so obstinate as to call upon all the practitioner's resources. Tincture of digitalis, alum, and sulphuric acid, have severally proved efficacious in my hands; but the medicines upon which I place most reliance in bad cases are acetate of lead with opium, gallic and tannic acids, Ruspini's styptic, and matico. Tannin I found in one case to act nearly like magic. After the arrest of the hemorrhage our anxiety does not always

terminate, for the bladder sometimes becomes filled with coagulated blood, which distends it so as to form a firm tumour, perceptible above the pubis; this gives rise to all the distressing and urgent symptoms of total retention of urine, To free the bladder of this blood is, therefore, the object indicated. To accomplish it a gum-elastic catheter must be introduced; and, after breaking up the coagulum, tepid water should be injected. This process should be repeated two or three times, or oftener, according to circumstances; but it must be done with extreme care and caution. I have seen a syringe applied to the catheter productive of good results, by facilitating the removal of the broken-up coagula.

I have witnessed two cases in which these measures having failed to achieve the desired end, the bladder was opened above the pubis, as in the high operation of lithotomy, and the blood removed, but in neither instance was life preserved. It strikes me the lateral operation would be a better and a safer one.

The symptoms of the chronic enlargement of the prostate gland are, in the commencement, purely local, but, as the affection progresses, they become constitutional also, and in the advanced stages are both grave and distressing. They creep on frequently in the most insidious manner; and the first intimation a patient often gets of his misfortune in being the subject of prostatic disease is the announcement of it by the surgeon who has been called in to relieve him of a retention of urine brought on by some indiscretion,—either by indulging too much in the pleasures of the table, or after being exposed to wet, cold, or fatigue. I was called some years ago to see a gentleman about seventy years of age, who had been seized with retention of urine under the following circumstances:—He had accompanied some ladies to a review in the Phoenix Park, where he had a desire to make water several times, but, having had no opportunity, he was obliged to disobey the calls. When he returned home, on going to make water, he could not pass a single drop. I introduced a catheter without dif-

ficulty, but found that the gland was considerably enlarged; still this patient positively assured me he never before experienced the least urinary annoyance. I have seen many such cases. Generally the patient becomes aware of the first deviation from the natural condition of the prostate by observing that he is obliged to make water three or four times in the twenty-four hours oftener than heretofore; and soon he discovers he cannot propel the stream of urine with the accustomed force, without making undue exertion. After a lapse of time, as the gland enlarges, the bladder cannot ever completely empty itself, and the desire to make water returns almost immediately after each evacuation, and this produces some forcing and straining. In the course of a still longer period all the symptoms described increase, and the patient becomes, in addition, subject to frequent attacks of retention of urine, which impending evil he can only avert by regimen, constant care of his general health, and abstinence from sexual excitement. Up to this stage there may or may not be pain. Sometimes weight in the loins is complained of, pain along the sacrum, over the pubis, or down the inside of the thighs, and irritation in the glans penis; frequently there is severe pain felt at the neck of the bladder during micturition, especially as the last drops of urine are expelled; and if the gland be much enlarged, and have grown towards the rectum, irritation and uneasiness in this part will be felt. Should the patient be negligent of himself, or omit to obtain surgical advice, the disease will steadily augment, and sooner or later, according to circumstances, other and distinct symptoms are set up.

The bladder begins to give evidence of inflammation of its mucous coat, as a consequence of which its irritability becomes much increased; pain is, if previously absent, superadded, if present, aggravated; and mucus is secreted and expelled along with the urine. At first the secretion is semi-transparent and tenacious, but as the inflammation continues and becomes more chronic it changes to muco-purulent, and the urine as-

sumes alkaline characters, being sometimes in smell very offensive. In the advanced periods of this stage of prostatic disease, the bladder, from its constant efforts to overcome the steadily increasing obstruction offered by the growth of the gland, becomes greatly thickened in its muscular parietes, and eventually the impediment becomes so great that the bladder is never able to empty itself of more than half its contents; there is, therefore, a constant partial retention, which, if not relieved regularly by the catheter, terminates in incontinence of urine. In these cases the urine is highly ammoniacal, the phosphates abound and appear like wetted hair-powder, thickly sprinkled through the mucous discharge. I have sometimes seen the interior of the bladder coated over with a layer of phosphate of lime. Occasionally blood and lymph are seen mixed with the mucous secretion: the first, indicating abrasion of the membrane; the second, increase of the inflammation: sometimes pure pus alone constitutes the discharge. The symptoms of the disease are now very aggravated; there is constant desire to pass water, which the inflamed mucous membrane, further irritated by the alkaline urine, makes more urgent; there is excessive pain also by the continual strong contractions of the thickened bladder, to rid itself of the irritating fluid, against the barrier offered by the prostate, and the additional difficulty occasioned by the mucus. In aid of the bladder all the voluntary powers are brought to bear in the expulsion of the urine, and excessive forcing and straining are the result. It is impossible to conceive a condition in which an unfortunate patient can be placed more truly pitiable than this. The ureters and kidneys finally become diseased, as they do in stricture or in other obstructive affections of the urinary apparatus, and ere long death kindly puts a stop to a complication of nearly unequalled human miseries. Very frequently phosphatic calculi are found in the bladder of prostatic patients, and in such cases the symptoms are extremely distressing, from the rough bodies irritating the sensitive surface of the inflamed mucous mem-

brane. I saw in St. Vincent's Hospital, a few months ago, a case of enlarged prostate, complicated with stone in the bladder; the symptoms were so distressing and urgent that the operation of lithotomy was undertaken, and skilfully performed by Dr. O'Ferrall. Much oftener calculi are formed in the ducts of the prostate, but it is only when they protrude or become detached into the urethra, that they give rise to inconvenience. In some cases the prostatic portion of the urethra, instead of, as it generally is, being rendered narrow in enlargement of the gland, becomes considerably dilated, so as to be capable of containing an ounce or more of urine; sometimes a large pouch, like a secondary bladder, is formed, which is perceptible to the finger, *per rectum*; in both cases the surgeon is very often deceived in passing a catheter, for, from seeing urine flow through it, he concludes it is fairly in the bladder, whereas it has not gone beyond the pouch or dilatation.

The bladder becomes the seat of many curious and interesting pathological changes, the result of the obstruction offered to its efforts to perform its duty, by the enlarged prostate:—great thickening of its muscular coat, and remarkable diminution in the capacity of the organ; protrusions of its mucous coat through the muscular, constituting sacs of various sizes, called herniæ, which are frequently filled with pus, and lined with phosphatic deposits. As these morbid changes are not peculiar to diseased prostate, I will not here dwell further upon them.

The prostate, when affected by the disease we have been considering, becomes sometimes the seat of suppuration. This occurrence is fortunately rather uncommon. Upon its symptoms and treatment it is not my intention, however, at present to comment. The treatment of chronic enlargement of the prostate gland we approach with intentions very different from those which actuate us in other affections; for this disease being, in fact, a natural change (if we be allowed the phrase),—one of the consequences that result from the declining powers of the

human machine,—we cannot hope by art or science to make it yield. We have it in our power, however, greatly to retard its progress; and if the patient, though he suffer much, will permit the interference of a surgeon, and scrupulously attend to his instructions, and observe the restrictions imposed upon him, he will generally pass a tolerably easy time, and live for a considerable period. The use of the catheter, leeches to the perinæum when indicated, keeping the bowels free, regular habits, avoidance of excesses at the table, also of wet, cold, and fatigue, and especially exemption from venereal gratification, constitute this treatment. When the mucous membrane of the bladder becomes inflamed, we can then do much to relieve the patient. Leeches to the hypogastrium when the inflammation assumes a degree of acuteness, and in all its stages blisters to the sacrum, will be productive of much benefit. Along with this, small doses of blue pill and cicuta I have found to act very favourably. When there is copious mucopurulent discharge, the infusion of buchu and the decoction of pariera brava, will be found extremely serviceable. I prefer the latter medicine, but it should be taken in much larger doses than those usually prescribed,—from half a pint to a pint in the twenty-four hours. The various balsams and turpentine, when the inflammation is purely chronic, and no pain attending it, are very useful. I saw a case of cystirrhæa, which had resisted treatment for a long time, effectually and rapidly cured by drachm doses of balsam of capivi, largely diluted by being taken with soda water. The chia turpentine I am inclined to extol, from its good effects in a few cases of this kind in which I have employed it. When the urine is alkaline (which is almost always, but not invariably, the case when mucus is present), and is loaded with the phosphates, mineral or vegetable acids are, of course, to be administered. I must say I give preference to the former, for, independently of their fulfilling, in the urine, the indication required, they prove general tonics to the system, and this is much needed. A favourite com-

bination of mine is a wine-glassful of equal parts of decoction of pariera brava and infusion of buccchu, with from ten to twenty drops of nitro-muriatic acid; to this, tincture of hyoscyamus may, if necessary, be added. This mixture, taken three times a day, I have seen to change completely, in a very short space of time, the character of the urine, and to diminish greatly, if not entirely remove, the accompanying mucus. I have been lately giving benzoic acid, in five-grain doses, in these cases, and can speak of it in terms of high commendation. Injecting into the bladder astringent, anodyne, or acidified lotions, when very carefully done, and with much watching to meet any new inflammation that may be set up by the procedure, I have seen attended with happy results; but if these precautions be not observed, bad consequences invariably follow. When the patient is distressed with constant and irresistible straining and forcing to make water, opiate suppositories combined with belladonna, will give great relief, and during their soothing operation the catheter must be passed regularly at stated intervals, and the patient must be enjoined to make no efforts of his own to empty the bladder.

All the treatment we have been describing is merely palliative. Can we, in the least degree, reduce the absolute volume of the prostate by influencing the conditions upon which its growth depends, viz., excessive assimilative or deficient disassimilative power? Mercury and iodine are capable of accomplishing this end in many parts and organs of the body, but I never found them exercise any very palpable effect upon prostatic enlargement. Injections of hydriodate of potash into the rectum have been said to be decidedly useful in diminishing the size of the gland; and I have been told upon the credible authority of my friend, Mr. Fleming, that in the case of an old gentleman whom he attended for retention of urine, arising from a very large prostate, he employed the hydriodate of potash injections *per rectum*, and in a very short period a reduction in size became perceptible. The plan recommended

of cutting down upon and dividing the gland, may, if the patient be younger than usual, and the disease without complication, be just allowable ; though, in a disease such as the prostatic, palliation is, I think, better than the adoption of curative measures that involve the least risk. To subject, however, an aged individual to this, an operation fraught with nearly as great danger as that of lithotomy, is, in my mind, an act little short of homicide.

ART. VI.—*On the Coagulability of Human Milk.* By WILLIAM D. MOORE, A. B., M. B.

HAVING some time ago commenced a series of experiments on human milk, principally with a view to the observation of such changes as might be produced in its physical and chemical properties by the supervention or existence of disease in the nurse, and to the establishment of rules by which such morbid changes might be recognised, I found myself in a great measure anticipated by the appearance of a paper by Dr. Peddie, of Edinburgh, “on the Mammary Secretion and its Pathological Changes,” &c., published in the *Monthly Journal and Retrospect of the Medical Sciences*, for August, 1848, and containing much valuable information on the subject.

I need not here dwell upon the great importance of being able to decide whether the secretion intended by nature for the nourishment of the infant be in a healthy state or not. This is sufficiently obvious. But I may remark that any process for determining this question by chemical means should, in order to be practically useful, be simple, easy of execution, and should require but little time for its accomplishment. I did not, therefore, propose to institute in every case an elaborate analysis, but simply to note the specific gravity, the reaction, the appearance and taste of each specimen, the amount of cream thrown up in a given time, the appearance of the milk under

the microscope, and the effect produced upon it by the application of heat and acids.

Being able, however, to refer the reader to Dr. Peddie's paper for an account of the changes produced in it by disease, I shall proceed to consider some of the leading characteristics of healthy human milk, especially those in which it differs from the mammary secretion of the animals whose milk forms in these countries, either ordinarily or occasionally, part of the food of man; and as one of the most striking of these differences is its behaviour in relation to heat and acids, the disputed question of its coagulability will form the principal subject of this paper. In conclusion, I shall endeavour briefly to draw such practical inferences as the facts observed may warrant.

That a point which might, at first sight, be supposed to admit of an easy demonstration, should be a matter of difference of opinion between eminent chemists, may well excite surprise; but that the fact is so will be at once seen by placing in juxtaposition the following statements made by two who deservedly rank among the first authorities on animal chemistry, I allude to the late Professor Berzelius and the late Dr. J. Franz Simon. "The most essential character," says the former, "of woman's milk consists in this, that the caseous matter which is found dissolved in it forms soluble combinations with acids, in consequence of which we cannot coagulate it by means of these latter"(a). The latter, on the contrary, speaking of the "ordinary milk of the human female," asserts that "everything that precipitates caseum coagulates milk"(b). Dr. Peddie, in the paper I have already alluded to, states that human milk "will precipitate curd from the serum or whey, if mixed with the mineral, acetic, or lactic acids"(c).

(a) *Traité de Chimie*, par J. J. Berzelius, traduit par Me. Esslinger; tom. vii. Paris, 1833.

(b) *Animal Chemistry with reference to the Physiology and Pathology of Man*; Sydenham Society Translation, vol. ii. p. 51. London, 1846.

(c) *Monthly Journal, &c.*, August, 1848, p. 66.

Professor Young concluded, from numerous experiments, that human milk is not coagulated by rennet; and that acids, whether mineral or vegetable, mixed with it in large quantity, do not produce any separation of curd from whey, whether the milk be tepid or raised to the boiling point(*a*).

Berzelius, on the contrary, states that, although the milk of woman cannot be coagulated by acids, rennet coagulates it regularly. One part of rennet to 500 of milk, he says, coagulates the latter at a temperature between 40° and 50° (104° and 122° of Fahrenheit), but slowly; the caseous matter, he adds, does not unite into a mass, as in cow's milk, but takes the form of isolated flakes(*b*).

The experiments of Professor Young were confirmed by Dr. Ferris, whose Dissertation on Milk gained the Harveian prize medal at Edinburgh in the year 1782(*c*).

In a pamphlet entitled "the Analysis of Milk, and the different Species thereof," published in 1762, Dr. John Rutty, of Dublin, it is stated that "woman's milk, coagulated by the same quantity of rennet as cow's milk, gave of curd very little, even not one-sixth of what cow's milk did"(*d*).

The late Dr. Joseph Clarke, who so long held an eminent rank in this city, and whose extensive experience demands attention for any opinion advanced by him, conceived that human milk, in a healthy state, contains little or no curd; and that viscid cream rejected by the stomachs of infants has given rise to the opinion of curd in the milk vomited by them(*e*).

Having stated the following as a generally received opinion among medical writers, viz., "that human milk is coagulated in the stomach of infants, and that it is coagulable by acids,

(*a*) See Dr. Clarke's paper in the Transactions of the Royal Irish Academy for 1788, p. 174.

(*b*) *Loc. cit.*

(*c*) Dr. Clarke's paper.

(*d*) A memoir of Dr. Rutty is given in the third volume of the present series of this Journal, p. 555.

(*e*) Transactions of the Royal Irish Academy, 1788, pp. 177, 178.

ardent spirits, and other known coagula," Dr. Clarke proceeds to inform us that he made a great number of experiments "in endeavouring to detect the curd of human milk, but without success." For this purpose he made use of all the different kinds of acids, ardent spirits, infusions of infant's stomachs, &c., in various proportions and degrees of temperature, and, except in one or two instances, never could perceive anything like curd. The following experiment I shall give in Dr. Clarke's words, as I shall have to allude to it hereafter:

"I took out the stomach of a fœtus deprived of life in the birth by lessening the bulk of its head. The gastric fluids in such a stomach could neither be altered by disease nor the admixture of food. I infused it in a small quantity of hot water, so as to make what might be considered a strong infusion. To equal quantities of cow's and human milk I added a tea-spoonful of the above infusion; in a short time the cow's milk was firmly coagulated, the human not in the least changed. At the end of the first hour I added a second tea-spoonful of rennet to the human milk, and soon after a third, without producing the smallest perceptible tendency to coagulation."

Johnson^(a) states that "all the methods of coagulation used in cow's milk succeeded in coagulating human milk, except vinegar, and the mineral acids very much diluted with water." In the coagulation of cow's milk he had employed the vitriolic, nitrous, muriatic, and phosphoric acids, vinegar, and the infusion of the dried stomach of a calf.

"It appears," he adds, "that the longer a milk is drawn, from the time of lying-in, the more caseous matter it contains, and then it is coagulated by acids; but the coagulation is always viscous, and never acquires that gelatinous consistence observed in the caseous matter of the cow." He subsequently quotes

(a) History of the Progress and present State of Animal Chemistry, by W. B. Johnson, M. B. London, 1803, vol. i. p. 156.

the experiments of Stipriaan, to the effect that "human milk was not coagulated by any of the acids, whether heat was used or not, nor by the rennet of the lamb or calf," but that it "was coagulated either by letting it become sour and boiling it, or using old sour milk; this cheese," he adds, "was much finer, more tender, and softer than that of other milk; it, however, cannot be collected in a lump."

"It is, perhaps," continues Mr. Johnson, "owing to the great difficulty, if not impossibility, of procuring this milk in a nearly similar state, which some authors have attributed to the irregularity of the human mode of living, that the experiments of chemists differ so much respecting its coagulation, as there is no other milk which is so readily affected by the difference of nourishment." He concludes by giving a view of Dr. Clarke's experiments and opinions on the subject.

Another suggestion of his is, that "the property of human milk, in not being always subject to coagulation by acids, appears to depend on the small quantity of caseous matter it contains, and its extension in this fluid; and this explanation," he says, "is confirmed by Scheele's experiments, which prove that cow's milk, diluted with six parts of water, loses the property of coagulation"(a).

Fourcroy asserts that all the processes which coagulate the milk of the cow produce the same effect upon that of a woman, but that the cheese is, in general, softish, unctuous, and does not acquire the same concrete state(b).

Among the milks of fifteen women which Meggenhofen examined, three only were coagulable by hydrochloric and acetic acids(c).

(a) I found no difficulty in coagulating cow's milk, diluted with six parts of water, by boiling it with a very minute quantity of nitric, hydrochloric, or acetic acid.

(b) A General System of Chemical Knowledge, &c., translated from the French of A. F. Fourcroy, by William Nicholson. London, 1804, vol. ix. p. 536.

(c) Berzelius, *loc. cit.*

Dr. Carpenter observes that "the casein of human milk is much less precipitable by acids than that of the cow, very commonly resisting the action of the mineral acids, and even that of the acetic, but being always coagulated by rennet, though the curd is long in collecting"(a).

With a view to ascertain which of the foregoing apparently contradictory classes of statements is correct, or, if possible, to reconcile them, I performed a great number of experiments, and have finally come to the conclusion, that the casein of human milk forms, with most acids, two sets of compounds, the one, when a certain quantity of acid is used, soluble in water, the other, when a different quantity of acid is used, insoluble in water(b), and that accordingly as each experimenter formed the soluble or the insoluble compound, he reported the milk on which he operated to be incapable or capable of coagulation with acids; and as the amount of acid necessary to coagulate the casein, will vary with the quantity of the latter which may happen to be present in a given specimen, it is possible that opposite results may have been arrived at by the same experimenter using the same quantity of acid with different samples of milk, giving rise to such statements as that I have just quoted from Dr. Carpenter, that "the casein of human milk very commonly" (but not always) "resists the action of acids."

(a) Principles of Human Physiology, by William B. Carpenter, M. D., F. R. S. Third edition. London, 1846, p. 667.

(b) This might perhaps be deduced from two observations made by Simon in two different works; one, that which I have already quoted from his *Animal Chemistry*, that "everything which coagulates casein coagulates (human) milk." The other is given by Berzelius in the ninth volume of his *Lehrbuch der Chemie* (1840), p. 699, and is probably taken from Simon's work, entitled "*Die Frauenmilch nach ihrem chemischen und Physiologischen Verhalten*," which I have been unable to procure in Dublin. It is to the effect, that by far the greater number of the combinations of human casein with acids are soluble in water. These two apparently opposite statements are only reconcilable on the supposition of the existence of the two classes of compounds.

I shall now proceed to describe some of the experiments which have led me to this conclusion. In each experiment I have, in consequence of the difficulty of obtaining a large supply of human milk, operated on two fluid drachms; and that the comparative experiments might be similar in every respect, I have used a like quantity of those milks which were more easily procurable.

EXPERIMENT I.—A portion of cow's milk, measuring two fluid drachms, boiled with a single drop of nitric acid, s. g. 1.417, was immediately resolved into a firm curd and whey; the same result took place when two fluid ounces of milk were used with a single drop of the acid.

EXPERIMENT II.—Two drachms of human milk, boiled with one drop of the same acid, remained uncoagulated. Filtered, a slightly opaline solution passed through, which, when examined under the microscope, was found to be quite free from milk globules. A light, creamy deposit remained on the filter, which, when mixed with a drop of water and examined under the microscope, was found to consist chiefly of unaltered milk globules; the presence of casein, in combination with acid, was demonstrated in the filtered liquid, by the addition to a portion of it, of a few drops of a solution of ferrocyanide of potassium, which immediately produced a copious precipitation(*a*).

The filtered solution was treated with ether. On allowing the latter to evaporate spontaneously, a white residue was obtained, which afforded a clear solution with water of caustic potash.

EXPERIMENT III.—Two drachms of human milk were boiled with five drops of the same acid. Coagulation took place, but was not very manifest until after the lapse of some hours. It was then filtered. A copious caseous precipitate remained on

(*a*) "The soluble combinations of caseous matter, with acids, are precipitated by ferrocyanide of potassium."—Berzelius, *op. cit.* vol. vii. p. 600.

the filter, which, when examined under the microscope, was found to contain numerous unaltered milk globules; the filtered liquor was quite clear, and on the addition of ferrocyanide of potassium exhibited no trace of casein. It was evident that in this case the acid coagulated the entire of the casein present in the milk.

EXPERIMENT IV.—The last experiment was repeated with ten drops of nitric acid, with the same results, except that the coagulation took place immediately.

I may here remark that the quantity of acid necessary to produce a coagulation sufficiently rapid to be immediately visible, will vary with the amount of casein present in the particular specimen of milk. I have sometimes observed immediate coagulation on using five drops, and sometimes ten have scarcely produced this result; but in no specimen that I have examined have I failed to produce it by adding a sufficiency of acid.

EXPERIMENT V.—Two drachms of human milk were boiled with two drops of dilute hydrochloric acid; no coagulation was produced; the filtered solution was almost perfectly clear; and ferrocyanide of potassium produced a copious precipitate. In this case it is evident that, as in Experiment II, a soluble combination of casein with acid had been formed, and passed through the filter. One drop fully coagulated two drachms of cow's milk.

EXPERIMENTS VI., VII.—Were repetitions of the fifth experiment, substituting twenty drops and one drachm, respectively, of dilute muriatic acid, for the quantity used in No. v.; coagulation was produced in both cases, slowly in No. VI., immediately in No. VII. The filtered solution was clear; a caseous deposit remained on the filter, and the filtered liquid gave no precipitate with ferrocyanide of potassium.

It will be seen that in the foregoing experiments with nitric and hydrochloric acids, the compound of casein and acid was soluble when a small quantity, but insoluble when a large quantity of the latter was employed. With acetic acid, how-

ever, the very reverse is the case, as will be seen by the following experiments.

EXPERIMENT VIII.—Two drachms of human milk were boiled with one drop of strong acetic acid; a perfect coagulation took place; the filtered liquid gave no precipitate with ferrocyanide of potassium; the coagulum on the filter contained unaltered milk globules.

EXPERIMENT IX.—A similar quantity of the same milk was boiled with ten drops of strong acetic acid; a coagulation took place, but to a much less amount than in Ex. VIII.; the filtered fluid gave an abundant precipitate with ferrocyanide of potassium.

EXPERIMENT X.—The foregoing experiment was repeated with half a fluid drachm of strong acetic acid; no coagulation took place; the filtered solution gave a copious precipitate with ferrocyanide of potassium.

In the foregoing experiments the acid solutions of casein passed through the filter (consisting of the ordinary coarse filtering paper) slightly opaline; they were quite free from milk-globules: the filtered fluids which contained no casein were transparent as water. When cow's milk, human milk, and boiled human milk, were passed through the same paper, the filtered fluid was little altered, contained numerous milk-globules, and, although some cream was retained on the filter, threw up a layer of that substance.

When cow's milk and goat's milk are mixed, without the aid of heat, with a very minute quantity of acetic acid, or with almost any proportion of nitric or hydrochloric acid, a strong coagulation immediately takes place. On the other hand, when ass's or human milk is mixed, without heat, with a very minute portion of acetic acid, or with a large portion of nitric or hydrochloric acid, no change is at first perceived. After some time a separation of soft flaky coagula takes place in the ass's milk, and a similar change occurs more slowly and less visibly in the human milk. If the four milks be now

filtered, and the filtered fluids be tested with ferrocyanide of potassium, no precipitation will take place, except in the specimens of human milk and ass's milk, which were treated with acetic acid, showing that in the other ten cases the separation of casein by means of acid has been complete.

The casein of human milk, when coagulated by an acid, does not form a dense, firm coagulum, like that of the cow or goat, but is soft and flaky, and generally floats near the surface of the fluid; this latter circumstance, however, is owing rather to the tenuity of the milk than to any peculiarity in the coagula; for, when cow's milk is much diluted with water, and its casein coagulated by heating it with an acid, the coagulum, (although the density of the milk is diminished by dilution), for the most part, floats near the surface, proving that in the other case its suspension in the serum is owing to the viscosity of the latter.

If human milk be left to itself for several days, a certain amount of coagulation takes place; some flaky coagula mix with the cream, and float near the surface, while others sink to the bottom.

Berzelius states that caseous matter gives, with a small quantity of acid, a combination soluble in water; and that with a larger quantity of acid it affords a combination but little soluble in water(*a*). This statement appears by the foregoing experiments to be quite correct in reference to the action of nitric and hydrochloric acids on human casein; yet the same authority states, as I have already mentioned, that the casein of human milk forms soluble compounds with acids, in consequence of which it cannot be coagulated by these reagents(*b*). By acting on cow's milk diluted with water, with a very small quantity of hydrochloric acid, and filtering, I easily obtained a solution in which the presence of casein was demonstrable by adding ferrocyanide of potassium. I did not succeed in

(*a*) *Traité de Chimie*, vol. vii. p. 600.

(*b*) Page 625.

forming a soluble compound of the casein of cow's milk with nitric acid. With acetic acid, added in small proportions, the casein of both cow's and human milk forms an insoluble compound which is, however, dissolved by an excess of the reagent.

It would then appear from the above experiments that the great difference between human and cow's milk, in reference to their coagulability, consists in this: that the range of soluble compounds formed by the casein of the former with acids is much more extensive than that of those formed by the casein of the latter.

It is well known that the coagulation of its casein is the first change which milk undergoes in the process of digestion(*a*); it is, therefore, not surprising that an acid which, when present even in very minute proportion, possesses this power, should be found as an element of the gastric juice; accordingly, the presence of acetic, as well as of hydrochloric acid, has been demonstrated in this fluid.

Dr. Clarke, as we have already seen, failed to coagulate human milk with the stomach of a child which was deprived of life *during* birth. With the stomachs of two children which perished in a similar manner, one from prolapse of the funis, the other by craniotomy, I could obtain no satisfactory coagulation; with the stomach of a child, however, which had lived some time, a decided coagulation was effected. No firm coagulum was formed, nor was the effect immediately perceptible, but after standing for a few hours the milk was seen to be full of minute flaky coagula, resembling minute acicular crystals(*b*);

(*a*) See West's *Lectures on the Diseases of Infancy*, &c., London, 1848, p. 338.

(*b*) In this case, and in that of the fœtus which perished by prolapse of the funis, I did not use the ferrocyanide of potassium test. Of the stomach of the fœtus, which perished by craniotomy, an infusion was made (No. I.). An infusion was at the same time made of the stomach of a child which had lived for some time (No. II.). Some of the infusion (No. I.) was added to

this effect was more decidedly produced on human than on cow's milk. Simon states(*a*), that "the mucous membrane of an infant a few days old, that has recently died, seems to coagulate woman's milk more perfectly than the mucous membrane of the stomach of the calf." Can it be that the stomach of the newly-born infant does not acquire a coagulating power until it has been subjected for some time to the stimulus of food? The milk secreted during the first hours of lactation is, as we shall presently see, coagulable by heat alone, which might be a provision to meet the weak coagulating power of the digestive organs.

In the experiments which I made with the stomachs of infants, they were placed each in a porcelain capsule, covered with distilled water, and placed in a water-bath, the heat of which was not allowed to rise above 120°. After the infusion had stood sufficiently long, a portion of it was added to the milk to be operated on, and the mixture in like manner was prevented acquiring a higher temperature than 120°. This precaution was taken to prevent the coagulation of the infusion, which was always highly albuminous.

human milk, the mixture placed in a water bath, and allowed to remain for a time at a temperature of 120° F.; it was then filtered; some coagulum remained on the filter; the filtered solution was slightly acidulated with acetic acid, and ferrocyanide of potassium was added; a precipitate was immediately produced. This experiment was repeated with the infusion (No. II.); the addition of the ferrocyanide produced no effect. It is evident that the coagulating power of No. II. was much stronger than that of No. I. Each was then tried with ass's milk, no coagulum remained on the filter, and the filtered solutions gave copious precipitates with the ferrocyanide. With cow's milk No. I. left a slight coagulum on the filter; the milk passed through but little altered, and, being acidulated as above, gave a copious precipitate with the ferrocyanide. The liquid filtered from the cow's milk treated with infusion No. II. was much clearer than the last, and gave a precipitate not nearly so copious. The only case, then, in which the coagulation seems to have been perfect, was that in which human milk was treated with infusion No. II.

(*a*) Animal Chemistry, vol. ii. p. 51.

Coagulability by Rennet.—Berzelius(a) observes, that the casein of woman's milk is with difficulty coagulated by the stomach of a calf, in consequence of the free alkali it contains; but that when the latter is saturated by an acid it coagulates as readily as that of cow's milk. I mixed a portion of human milk with rennet, and applied heat; no coagulation took place: on filtering the mixture, and adding a solution of ferrocyanide of potassium, a copious precipitate was obtained. Another portion of the same milk was treated in a similar manner, having been previously rendered slightly acid; it was coagulated, and by filtration afforded a clear liquor, which was not affected by the ferrocyanide of potassium. The possibility of one experimenter having operated on a specimen of milk which had become spontaneously acid, while another used one which retained its natural alkalinity, will hence account for the discordant opinions given on this subject.

Human milk is whitish, with a slight tinge of blue, considerably thinner than cow's milk. It is always alkaline; when boiled it becomes, like every other kind of milk, covered with a film of coagulated casein. (Simon). According to Scherer, if the serum of blood be diluted with water, and gently heated, or, still better, if it be mixed with alkali, before being heated, a pellicle similar to that on milk is formed, and the rest of the fluid is not coagulated. In both cases the formation of this pellicle is owing to the oxygen of the air, for it does not take place in an atmosphere of carbonic acid(b).

On examination with the microscope human milk is seen to consist of numerous globules of various sizes, floating in a colourless fluid. This fluid holds in solution casein, sugar of milk, and various salts. With regard to the nature of the globules different opinions have been entertained. Some, as M. Raspail(c), have

(a) *Lehrbuch der Chemie*, 9ter Band, Dresden und Leipzig, 1840, p. 699.

(b) Wagner's *Handwörterbuch der Physiologie*, u. s. w., Braunschweig, 1845, vol. ii. p. 453.

(c) *Nouveau Systeme de Chimie Organique*, Paris, 1838, t. iii. p. 136.

supposed that some of them are oleaginous, others albuminous. Donnè, on the other hand, argues that since the globules entirely disappear when agitated with ether, they must all belong to the fatty element of the milk(a). Simon considered them to be fat vesicles, having an envelope of coagulated casein(b).

Human milk rapidly throws up an abundant cream; this is sometimes accidentally diminished. In a patient of Dr. M^cClintock's, whose milk I examined on the second day of menstruation, and in the seventh month of lactation, and in whom the menses had regularly returned since the fourth month of nursing, I found the cream very deficient. This was the only peculiarity I could discover in the milk. Some days after the catamenial flow had ceased I examined the milk again, and found that it threw up twice as much cream as it had done during the continuance of the menstrual period. M. Raciborski, from an examination of the milks of seven nurses, taken during menstruation, concludes that the only peculiarity which milk drawn at such a time seems to present is, that it is less rich in cream than during the intervals between the flux. He also was of opinion that the supposed inconvenience of the milk during menstruation has been much exaggerated, and that a nurse ought never in any case to be rejected simply because she continues to menstruate(c).

This opinion, is, however, certainly not correct, as children always suffer an amount of inconvenience when the nurse menstruates, which, repeated at the end of every month, would produce a decidedly injurious effect upon them. In these cases all children suffer more or less from sickness of stomach, disordered state of the bowels, and in some cases even convulsions have occurred, though it may be admitted that when the menstrual period is over, the milk no longer appears to disagree with

(a) *Cours de Microscopie*, Paris, 1844, p. 356.

(b) *Animal Chemistry*, vol. ii. p. 42.

(c) Quoted in *Edinburgh Medical and Surgical Journal*, vol. lxi. p. 228, from *Journal de Pharmacie*, Aug. 1843.

the child. It is also found to produce an injurious effect upon the mother if she continues to nurse after the catamenia return, and if her general health is impaired it must obviously react upon the child. For these as well as other reasons, most practitioners in midwifery agree in considering that a nurse who menstruates ought to be rejected. And it is for this reason, and not for want of experience, that an objection is made to women with their first children, or who nurse for the first time, as with them menstruation generally returns after a few months.

The specific gravity of human milk is very variously stated in different works: Berzelius says it ranges from 1·020 to 1·025, and sometimes a little higher(*a*); Raspail quotes it at the same, stating, however, that it will vary with climate and other circumstances(*b*); Simon states it at from 1·030 to 1·034, and gives as the average 1·032; Brisson makes it so low as 1·0203(*c*). Of twenty specimens of healthy milk, of which I took the specific gravity, the highest was 1·033, the lowest 1·025, the average 1·0299. The specific gravity will, of course, vary with the amount of secretion and the period of lactation.

The *colostrum*, or the first milk secreted after the commencement of lactation, differs remarkably from ordinary milk; it is thick, of a yellow, yellowish, or dirty whitish yellow colour. On standing, a viscid deposit forms at the bottom, while a thick, yellow cream mounts to the surface of the fluid; it is alkaline; exhibits under the microscope some true milk-globules, generally irregular and badly formed, some of them resembling large drops of oil; it also contains a number of very small globules, presenting throughout the fluid a pulverulent appearance; many of the globules exist in agglomerated masses: in addition we perceive the granular bodies described by Donnè(*d*); this author states, that on dissolving the fatty parts of

(*a*) *Lehrbuch der Chemie*, 9ter Band, p. 697.

(*b*) *Op. cit.* t. iii. p. 157.

(*c*) Rees' Cyclopaedia, art. Milk.

(*d*) *Op. cit.* p. 400; see also Dr. Peddie's paper.

the colostrum by ether, mucous globules(*a*) are seen to exist in it. Accordingly we find that caustic potash converts colostrum into a gelatinous mass.

The colostrum differs remarkably from ordinary milk in being coagulable by heat; it will often become, on the application of heat, solid like white of egg; it also affords an immediate coagulation when mixed with nitric or hydrochloric acid without heat. On adding acetic acid to a portion of colostrum it appeared at first to be very slightly coagulated, but on examining it at the end of some hours it was found to have solidified. This state of extreme coagulability lasts for a very short time; I have found it to have disappeared before the end of the first day of lactation.

Colostrum is much richer in solid constituents than ordinary milk, especially in butter and sugar; the casein and salts are also increased. Simon attributes the well-known aperient property of the colostrum to the increased quantity of salts and sugar of milk(*b*).

It was seldom I could obtain colostrum in sufficient quantity to take its specific gravity; of eight specimens, the highest was 1.034, the lowest 1.028, the average 1.0316.

To Dr. Sibthorpe, assistant physician at the Dublin Lying-in Hospital, I am indebted for all the specimens of colostrum, and for many of those of ordinary milk, which I have examined. Without the zealous co-operation which he so kindly afforded me, I should have been unable to carry on the present investigation.

Although I stated that I should not in this paper enter into a consideration of the changes produced in the milk by disease or other circumstances, the following case so nearly simulates one with the colostrie secretion that I shall briefly mention it here; it was furnished to me by my friend Dr. Sibthorpe. In

(*a*) *Cours de Microscopie*, p. 401; Donnè supposed the granular bodies to be composed of fatty matter and of this peculiar mucus.

(*b*) *Animal Chemistry*, vol. ii. p. 50.

two respects only does it appear to differ from colostrum, viz., in its specific gravity and taste. It was the milk of a woman who had been nursing for the almost incredible period of two years and nine months. She was, as might be expected, dyspeptic, and was menstruating when the milk was taken. It was of a dirty white colour, alkaline, threw up a considerable cream; specific gravity 1.024; taste saltish; was converted into curds and whey by the application of heat; and exhibited under the microscope numerous colostrie bodies, and agglomerated globules.

The milk of the cow and goat form dense coagula with acids, and throw up an abundant cream. That of the ass, on the contrary, has, like the milk of woman, a more extended range of soluble combinations with acids; and its coagulation, while it takes place much more easily than that of human milk, resembles it strongly in consistence, being soft and flaky; hence its adaptation to the infant and valetudinarian stomach. In tenuity, also, it bears a close resemblance to woman's milk, and, in consequence of this property, its coagulum, for the most part, floats near the surface(*a*).

In the proportion of saccharine matter also, which it contains, it approaches more nearly to woman's than do the other milks I have mentioned. In one important particular, how-

(*a*) Ass's milk contains much less casein than human milk, hence it ought, if the casein of both be of the same nature, to be coagulable by a less proportion of acid; that is, a given quantity ought to require less acid to form with its casein an insoluble compound; and such we find to be the case. The milks of the cow and goat, on the contrary, contain a considerably larger proportion of casein than woman's milk does; and, consequently, if the chemical relations of their casein were similar, they should require much more acid for their coagulation, but they coagulate with infinitely less. We have also seen that the effect of acids, when employed without heat, is different on these two classes, if I may so speak, of milks. For these reasons I am inclined to think that some difference might be found in the ultimate composition of the casein of human and ass's milk on the one hand, and of that of cow's and goat's milk on the other. I am not aware that any, except the casein obtained from cow's milk, has been subjected to analysis. The one

ever, it differs from human milk,—it is very deficient in cream. For this reason I should be inclined to recommend that, when ass's milk is administered as nourishment to infants, it should be mixed with a twentieth part of cow's cream. The necessity of an oily element in the food of man is well known, and this is certainly very deficient in ass's milk. By this addition the milk is rendered much more palatable.

The importance of administering oily matter in many diseases is now very generally recognised. Dr. Bennett believes “that the therapeutic action of cod-liver oil is essentially dependent on its fatty nature. To him it seems certain, that in tubercular diseases (and in chronic rheumatism) the albuminous compounds are in excess, and the oily compounds diminished in the economy. The direct addition of the latter, therefore, is the most rational method of supplying the wants of the system”(a). If these views be correct, the addition I ventured to suggest would, I should think, be found in many cases an improvement, especially as ass's milk is so often ordered in the class of diseases (tubercular) to which Dr. Bennett alludes.

It was probably the circumstance of its containing an class of milk appears to afford a less azotized nutriment, but to be well adapted to weak digestive powers, while the other contains a much more solid aliment, requiring a comparatively strong digestion.

The following analyses are taken from Simon's Animal Chemistry:—

Constituents of Milk.	WOMAN'S MILK.	Ass.	Cow.	Goat.
	Simon.—Average of fourteen Analyses.	Peligot.—Mean of several Analyses.	Simon.	Clemm.
Water, ...	883·6	904·7	857·0	865·175
Butter, ...	25·3	12·9	40·0	42·507
Casein, ...	34·3	19·5	72·0	60·321
Sugar of milk and extractive matters,	48·2	62·9	28·0	44·065
Fixed salts, . . .	2·3		6·2	

The butter in woman's milk in the above table is lower than that given in most other analyses. Simon gives 54·0 as the maximum.

(a) Braithwaite's Retrospect, vol. xvii. p. 365.

abundance of cream or fatty matter which induced Helvetius to recommend goat's milk in preference to ass's, and as "particularly proper to restore children in consumptions, as well as other extremely thin and emaciated bodies." This quotation of Helvetius I take from Dr. Rutty, who has appended the following explanation and qualification, viz.: "as being more nourishing and less stimulating, though how far the circumstance of its being harder of digestion may determine its usefulness in particular cases, must be left to observation"(a).

The objection thus raised by Dr. Rutty is met, I conceive, by the proposal to combine the nourishing oily portion of cow's milk (which, I believe, when properly diluted, is not the least digestible portion of the milk), with a milk which, from its easy digestibility, is admirably adapted to the invalid stomach.

Donnè recommends the use of cow's milk from which the fatty matter has been almost entirely separated by filtration, as a light aliment, easy of digestion, sufficiently nourishing, and having no laxative property. Such milk, he says, might be useful to children inclined to diarrhœa, to whom we might wish to give a light nourishment(b). The filtration is accomplished by means of filters of good paper, and the filtered liquid is not to be collected until it begins to pass perfectly transparent or very lightly opaline. There appears to me to be at least one capital objection to this proposal, which is, that by Donnè's own testimony, at least twelve hours are required for the filtration of half a pint. I need not say that the milk will not, by so long exposure to the air, become better adapted for administration in a case of diarrhœa, and it appears to me, that such a milk as M. Donnè would recommend is prepared by nature in the mammary gland of the ass.

Dr. Sibthorpe has taken the trouble to draw up for me

(a) The Analysis of Milk, appended to "The Argument of Sulphur or no Sulphur in Waters discussed." By John Rutty, M. D. Dublin, 1762; p. 15.

(b) *Cours de Microscopie*, p. 460.

some interesting tables relative to the periods at which lactation commences, which want of space obliges me reluctantly to omit. Of fourteen cases mentioned in these tables, one had a flow of milk three days before delivery, and two had milk at the time of delivery. In the remaining eleven cases lactation commenced as follows:—one at one hour, one at eight hours, two at eight hours and a half, one at ten, one at fourteen, one at eighteen and a half, one at twenty, one at thirty-three, one at thirty-seven, and another at thirty-eight hours after the birth of the child.

The analogy between the milk and the blood is most striking. The latter fluid, requiring so many and complicated processes for its elaboration, is presented to the newly born, whose powers would be quite unequal to the task, as it were, already prepared.

ART. VII.—*Observations on the late Epidemic Dysentery in Dublin.* By R. MAYNE, M. D., Physician to the South Dublin Union Workhouse, and Lecturer on Anatomy and Physiology at the Richmond Hospital School of Medicine.

A CONSIDERABLE period has now elapsed since the late epidemic of dysentery appeared in Dublin, and as my connexion with the South Dublin Union Workhouse afforded me vast opportunities for studying the disease, I have determined to submit the result of my observations to the profession.

From time to time, whatever cases possessed any interest were carefully noted, and the records thus obtained have furnished the materials for the following pages.

The better to show the progress of the epidemic, I have arranged in a tabular form the numbers of new cases in the workhouse each month, from April, 1846, to August, 1848, inclusive; those which arose within the workhouse are distinguished from those sick on admission; the monthly mortality is added; and a brief summary of the ages of all is appended.

In drawing up this abstract I have confined myself to the male department of the workhouse; but at the female side, which was chiefly under the management of my colleague, Mr. Shannon, the disease prevailed with equal severity.

TABLE showing the Numbers of male Patients labouring under Dysentery on their Admission into the South Dublin Union Workhouse; also the Numbers attacked in the Workhouse, and the Mortality for each Month, from April, 1846, to August, 1848, inclusive.

1846.	New Cases sick on Admission.	New Cases arising in the Workhouse.	Total Num- ber of New Cases.	Deaths.
April, ...	4	53	57	2
May, ...	5	28	33	4
June, ...	3	12	15	0
July, ...	4	27	31	1
August, ...	3	26	29	0
September, ...	2	23	25	3
October, ...	6	46	52	7
November, ...	4	47	51	11
December, ...	7	29	36	20
1847.				
January, ...	13	34	47	10
February, ...	12	23	35	15
March, ...	8	46	54	19
April, ...	11	38	49	20
May, ...	26	39	65	27
June, ...	11	34	45	17
July, ...	17	48	65	20
August, ...	16	59	75	20
September, ...	26	40	66	29
October, ...	16	29	45	22
November, ...	19	50	69	21
December, ...	9	34	43	29
1848.				
January, ...	10	40	50	21
February, ...	12	39	51	13
March, ...	8	35	43	16
April, ...	5	28	33	13
May, ...	7	11	18	11
June, ...	5	9	14	10
July, ...	3	8	11	6
August, ...	3	12	15	6
	275	947	1222	393

TABLE showing the Ages of the male Patients affected with *Dysentery*, also the Ages of the male Patients who died, and of those who recovered from *Dysentery*, in the South Dublin Union Workhouse, from April, 1846, to August, 1848, inclusive.

	Numbers Attacked..	Number of Deaths.	Number Recovered.	Remaining under Treatment.
Under 10 years of age, . .	127	74	51	2
From 10 to 20 years of age,	104	19	85	0
From 20 to 30 do. do.,	65	13	51	1
From 30 to 40 do. do.,	112	22	90	0
From 40 to 50 do. do.,	134	27	106	1
From 50 to 60 do. do.,	216	59	156	1
From 60 to 70 do. do.,	259	94	164	1
From 70 to 80 do. do.,	161	70	90	1
From 80 to 90 do. do.,	44	15	29	0

According to these tables, the disease proved fatal to nearly one-third of those attacked; but the mortality will scarcely appear surprising when all the concomitant circumstances are duly considered. 179 deaths, or nearly one-half the fatal cases, occurred in persons from sixty to ninety years of age, a time of life at which the chances of recovery from any acute disorder are necessarily small; whilst 275 of the patients submitted to treatment were labouring under dysentery on their admission into the workhouse, and of these very many were from the first in a hopeless condition.

Various circumstances contributed to produce the great mortality amongst this latter class of persons; the majority of them were broken down by previous destitution, and unwholesome or insufficient food; and in almost every instance the acute stages of the disease had passed over either totally neglected or without efficient treatment, until, in the chronic form, the complaint had become absolutely incurable.

An excessive mortality appears in the class under ten years of age; but in a large proportion of them, the disease occurred as a complication, or rather as a sequela of measles, which at that time prevailed in the workhouse. The hybrid malady thus

generated proved peculiarly malignant, running its course with surprising rapidity; and so general was the epidemic influence that the ordinary chest complications of Rubeola were seldom observed, whilst dysenteric attacks were almost universal.

In estimating the severity of this epidemic at different periods the reader should bear in mind that a comparison of the mortality with the number of new cases in each month, if relied upon exclusively, might lead to conclusions not exactly accurate. By this method of calculation, for example, the proportion of deaths to new cases appears greater in the months of May, June, July, and August, 1848, than at any previous period, whereas the complaint was then actually upon the decline, its fatality having vastly diminished, and the numbers attacked being greatly lessened. In explanation it may be stated that very few died of the disease in its acute stages; when fatal it gradually merged into the chronic form, and thus oftentimes many months intervened between the first seizure and the fatal termination.

In the late epidemic two forms of dysentery requiring separate consideration were observed at the South Dublin Union workhouse. In the acute variety the disease seemed to follow a pretty uniform course, yielding readily *at the commencement* to active treatment, but gradually merging into the chronic form, or terminating fatally when the early symptoms were neglected or mismanaged; whilst the chronic dysentery appeared as a complicated malady, frequently involving distant organs in its progress, remarkably difficult of cure, and ending for the most part fatally, after a painful and protracted struggle.

ACUTE DYSENTERY.—ITS PATHOLOGY.

In all the *post mortem* examinations of those who died within three weeks from the commencement of the disorder, the large intestine was found the principal seat of the organic mischief, and in the majority of such cases it was the only

part engaged. The morbid appearances generally extended from one end to the other of this portion of the intestinal tract; but it may be stated as a general rule, to which I do not recollect a single exception, that the lower parts of the canal were those most intensely affected, and that the structural changes became gradually less and less apparent as they were traced upwards towards the cæcum. An undue degree of vascularity of the peritonæum covering the diseased portions of the canal was generally observed, and the absorbent glands along the large intestine usually attracted attention from their extreme congestion; these bodies, which are of a pale colour and insignificant size when healthy, were, in almost every instance, enlarged, and of a dark claret hue. The walls of the diseased intestine were always enormously thickened and indurated; grasped between the fingers the part felt semi-cartilaginous, and to the scissors it offered an undue degree of resistance, cutting like brawn. The cavity of the intestine was found almost invariably contracted. In no instance were scybala present, and rarely were any traces of true fæces discovered, the contents of the lower bowels being similar to the matters last evacuated during life.

The mucous coat presented the most remarkable alterations in structure; in colour it exhibited every variety of shade, from the most intense vermilion to dark green and purple; in the rectum the green or purple hue of gangrene often predominated, but in the upper portions of the colon and in the cæcum a more florid vascularity for the most part prevailed.

In certain cases, which had run a very rapid course, the entire free surface of the mucous membrane, from the cæcum to the anus, was covered with a thick branny exudation, of an olive or dark brown colour, and presenting a striking resemblance to the cutaneous disease ichthyosis, or the material called shagreen; by scraping this with the blade of a scalpel it was easy to detach it from the subjacent membrane, which then appeared red, tender, and superficially ulcerated.

In other instances, where the disease proved less rapidly fatal, the mucous membrane exhibited various forms of ulceration; sometimes the ulcers were solitary, with indurated bases and elevated irregular margins, not unlike the Hunterian chancre; these were always most numerous in the rectum and sigmoid flexure of the colon, and became fewer and fewer as the cæcum was approached; sometimes the mucous membrane over a great extent of surface appeared raw and velvety, with varying shades of vascularity, and, on close examination, it was found superficially ulcerated; whilst in a third variety the ulcers were large, irregular, ragged, and had deeply eroded the walls of the gut. In a vast number of cases these ulcers had penetrated fairly to the serous coat, but in no instance did perforation actually occur.

In the acute dysentery the small intestine was usually found healthy, the ileo-cæcal valve forming a line of demarcation to the disease; but in a few instances the ileum and the jejunum were both implicated, the mucous membrane of those intestines being excessively congested, although never actually ulcerated. Here also, just as in the large intestine, the disease seemed to decrease gradually from below upwards.

The liver was sometimes extremely congested, and poured out dark venous blood in excessive quantities when incised; but this condition of the liver was certainly not essential to the disease, for it was very frequently absent. The gall-bladder was always moderately distended with thin orange-coloured bile. The spleen and pancreas, the thoracic viscera, and the brain, were ordinarily healthy.

It is unnecessary to detail the symptoms of acute dysentery as they are too well known to require more than a passing notice, and during the late epidemic they presented nothing peculiar.

Fever was always present, but it resembled the constitutional disturbance produced by a severe local disease, rather than any of the ordinary forms of continued fever. The dis-

case, in almost every instance, commenced by a bowel attack, *not preceded* by fever, and the pyrexial symptoms which followed increased or diminished in proportion to the success or the failure of the remedies exhibited to subdue the local inflammation; in a word, the accompanying fever appeared to be the constitutional expression of local suffering, and not the more complex derangement of the system entitled continued fever.

In making this statement I do not mean to assert that during the recent visitations dysentery and typhus never co-existed; in a certain number of cases dysentery occurred as a sequela of fever, and in a few it seemed to arise during the progress of fever; but there was no necessary connexion between the two diseases, and when they happened to attack the same individual, the complication appeared to be purely accidental.

The dejections presented very different appearances in different cases: in some they consisted almost exclusively of shreddy mucus intermixed with blood, and without a trace of fecal matters; in others the sanguineous discharge seemed to predominate, large quantities of fluid blood passing in every stool; in a third class of patients a tremulous, gelatinous-looking substance, ropy, tenacious, and tinged with blood, formed the greater part of the evacuations, and, like the secretion from the bladder in chronic cystitis, it also frequently adhered to the bottom of the vessel; in a fourth, a greenish semi-fluid material, like spinach, appeared the principal ingredient; whilst in a very large proportion the stools, from the very commencement, exhibited neither blood, lymph, nor mucus, but assumed at once the ochry appearance so common in chronic dysentery.

The treatment which proved most successful may be summed up in a few words: dissection showed that the disease consisted essentially in a severe inflammation of the large intestine, tending rapidly to ulceration, and sometimes even pro-

ducing the death of the structures implicated; and, true to its pathology, it usually yielded to mercury and other antiphlogistic measures, *when this line of treatment was employed sufficiently early*.

Venesection was practised with the best results whenever the patient was young and vigorous, and came under treatment in good time; but in a vast majority of the workhouse cases *local* detraction of blood was the only mode of depletion practicable: this was best effected by leeching the verge of the anus repeatedly, greater relief being obtained from twelve leeches so applied than from triple the number placed upon the abdomen; the hemorrhoidal veins were in this manner most effectually unloaded, and at the same time the distressing tormina and tenesmus were with great certainty mitigated.

Mercury, however, must be considered the principal remedy. At this conclusion both my colleague, Mr. Shannon, and myself, had arrived early in the epidemic, and in it we were confirmed by the subsequent experience of the assistant physicians, Dr. Kennedy and Dr. Richardson. I was at first much prejudiced against the use of calomel, from recollecting the severe mucous irritations which it so constantly produces when administered for other diseases, and knowing that its efficacy in controlling mucous inflammations in general is trifling compared with its curative powers in analogous affections of serous membranes or of parenchymatous organs. The weight of Dr. Cheyne's authority also tended in no small degree to create in my mind a distrust of the mercurial treatment; it was not, therefore, until repeated trials convinced me of its value, and of the total insufficiency of every other means, that I became a perfect convert to the practice; but the admirable essay of the late Dr. O'Brien, of Dublin; Dr. Latham's highly practical treatise on the disease which prevailed at the Milbank Penitentiary; Dr. Ferguson's Memoir on the Mercurial Plan of treating Dysentery(*a*); and, more recently, Dr.

(*a*) Med. Chir. Trans., vol. ii.

Lalor's paper on dysentery, in a late Number of this Journal; and Baly's Gulstonian Lectures on the same subject, all advocate the use of mercury, and sufficiently attest its powers.

Mercury, *when exhibited early*, usually controls this disease with as much certainty as it cures peritonitis, or any other acute inflammation for which modern physicians prescribe it; but, to be successful, it must be administered before serious organic mischief has been produced. As in other acute inflammations, the good effects of the mercurial treatment are sometimes first perceived simultaneously with its action upon the gums, but very constantly it produces a cure before any symptoms of salivation arise; so that a daily inspection of the evacuations alone enables the physician to determine when the remedy ought to be discontinued.

The beneficial influence of the mercury is first recognised by the appearance of true fecal matter in quantity in the stools, accompanied by marked relief to the general uneasiness, and a decided decrease of the dysenteric discharges. As soon as the natural secretions are fairly restored, the mercurial treatment may be safely laid aside, irrespective of the condition of the mouth.

In some very rare instances salivation was induced by calomel without causing any immediate improvement in the evacuations, or materially alleviating the patient's sufferings; a gradual amendment, however, generally ensued in such cases, and I feel convinced that when the gums are once fairly affected by calomel its further exhibition does no good in dysentery.

In a certain proportion of the patients calomel appeared neither to improve the dysenteric discharges, nor yet to affect the mouth. Such cases invariably proved refractory, and very often ran on to a fatal termination.

The extravagant praises bestowed on large doses of calomel by Annesley, and other army surgeons who had practised in India, induced me, in some very acute cases, to exhibit it in

doses of one scruple at bed-time, for two or three successive nights. In this quantity it unquestionably exerts a most powerful influence on the entire mucous tract, affording at once marked relief to the most urgent symptoms, and often producing healthy dejections after a single dose; but I do not recollect that in any instance the final recovery of the patient was accelerated by this plan. Smaller doses effect equally certain cures without the same risk of excessive salivation. Two grains of calomel, with three of Dover's Powder, every fourth hour, usually succeed, even in the most acute varieties of the disease; and much smaller quantities, or even hydrarg. cum cretâ, or blue pill, have been sufficient in many cases where the age or the delicacy of the patient seemed to forbid more active treatment.

Mercury by inunction was tried with very uncertain results; an erroneous impression that calomel would irritate the inflamed mucous surfaces first led me to this practice. In some cases salivation was produced by mercurial rubbings, without curing the dysenteric symptoms; and in all the recovery was less expeditious and less certain than when calomel was used.

In addition to the above active measures, great benefit may be derived from local applications to the abdomen; warm fomentations and poultices often exert a most soothing influence. The bran poultice, from which such excellent results are obtained in midwifery practice, will be found not less efficacious in dysentery. A very convenient mode of applying this remedy is to place a sufficient quantity of scalded bran in a large flannel bag, this retains the heat and moisture for a considerable length of time, and admits of very ready application and removal; it often forces the skin into general perspiration, relieving singularly the deep-seated uneasiness, and producing all the benefits of a warm bath without any of its inconvenience.

Next to mercury, alkaline medicines appeared to exert the most beneficial influence in acute dysentery. Unaided by

mercury, their power to control the disease is but feeble, nor ought they ever to be depended upon, as a substitute for mercury, when the complaint is recent and the patient's constitution healthy; but when the evacuations have assumed a healthy colour, under the influence of mercury, the stools still continuing too frequent and too fluid; or when mercury has fairly affected the mouth, without improving the stools, or materially alleviating the distress; or when the constitution is too feeble, or the dysentery too chronic, to afford a reasonable expectation of success from the employment of mercury, the most remarkable benefit is sometimes obtained from this class of remedies. *Liquor potassæ* in full doses, combined with small doses of some fluid preparation of opium, and frequently repeated, as recommended by Mr. Kelly of Mullingar(a), produces a most soothing effect, under the circumstances above stated; but lime water will also frequently hit when the ordinary cretaceous or astringent mixtures would to a certainty increase the irritation.

Of various other remedies reputed useful in acute dysentery, fair trials were made, and with but little success.

Astringents, whether belonging to the vegetable or to the mineral kingdoms, are unsuited to the acute stages of dysentery, never failing to increase the mischief; and even in the chronic forms of the disease they are of doubtful efficacy.

Bitartrate of potass in large doses was unsuccessful. The commendations bestowed upon it by Cheyne were sufficient to insure it a favourable reception, but candour compels me to acknowledge that in my hands it proved a signal failure. Several patients were prevailed on to take this medicine in half-ounce doses, but even in this quantity I could not perceive that it "promoted the biliary secretion," a property attributed to it by the above distinguished author; nor can I call to mind more than one solitary cure under its use, and in that case the

(a) *Dub. Quar. Journal* for Feb., 1848.

salt evidently ran to the kidneys, producing a very abundant diuresis.

Opium in full doses most certainly aggravated the disease—increasing the fever, drying the tongue, suspending the secretions of the skin, and not controlling the inflammation; in smaller quantities, particularly in the form of Dover's Powder, and in combination with mercury, it mitigated the patient's sufferings, without exerting any injurious influence, and, therefore, with these restrictions, it was usually prescribed; but in no shape or form should opium be relied upon exclusively as a cure for dysentery.

Purgatives were rarely beneficial, and in many instances where this class of remedies was exhibited unpleasant consequences resulted, the disease having been decidedly aggravated by their use. The failure of purgatives to relieve the disease may be explained by the extremely rare occurrence of scybala. On this point my experience entirely coincides with that of Dr. Cheyne, for in none of the *post mortem* examinations were any traces of faecal lodgments detected, and the stools seldom contained solid masses until the complaint was well nigh subdued.

There is, however, a stage of acute dysentery wherein laxatives render the greatest service, I allude to a period when the active inflammatory symptoms have yielded to treatment, and the patient seems to be progressing towards convalescence, whilst the lower part alone of the large intestine still remains unhealthy. That the upper portions of the large intestine are the first to recover, and that the rectum is the very last part to improve, may be fairly inferred from the appearances on dissection already detailed, and still more from the distressing tenesmus, accompanied by a copious discharge of glairy mucus, which often persists for a length of time, even after the faeces have become figured.

These are the cases in which the most decided tendency to scybala prevails, whether it be that the secretions of the cæcum

and colon are as yet defective, and, therefore, unfitted to form fæces of healthy consistence, or that the rectum still continues in a swollen condition, which retards the fæcal mass, and thus favours constipation.

Large doses of olive oil and mucilage sometimes afford relief under these circumstances; but draughts containing one drachm of castor oil in combination with twenty drops of spirits of turpentine, repeated at intervals of three or four hours, until the bowels are unloaded, are more effectual. The diseased portion of the tract is also within reach of local remedies, and, conflicting though the practice may appear, yet the exhibition of laxatives by the mouth, and the occasional use of astringent injections *per anum*, constitute a most successful combination of remedies in cases such as are here described. As an astringent injection, acetate of lead in solution fulfils every indication.

A tendency to constipation often remains, even after the cure is complete, and thus a strict attention to the bowels may be required for months, as a relapse is, at any time, very likely to be induced by the irritation of indurated fæces.

The turpentine, including balsam of copaiba, have rather disappointed me. In acute dysentery their powers to control the disease, or even to diminish the sanguineous discharges, are very questionable, nor should they, in the early stages, ever be preferred to mercury; but it sometimes happens that, after apparent recovery under the use of mercury, the patient relapses within a short period, the sanguineous discharges re-appearing. Mercury usually fails to cure the relapse with the same certainty that it controls the primary affection, and in such cases turpentine proves a most powerful remedy, its efficacy being analogous to what we know of its effects in iritis.

No prudent practitioner would employ turpentine in preference to mercury when the iritis is acute and the patient's constitution healthy, but when mercury has failed to cure iritis, or when a relapse occurs whilst the patient's system is as yet saturated with mercury, then turpentine often effects a cure,

and in dysentery it will frequently succeed under precisely similar circumstances.

The virtues which many writers on dysentery have attributed to ippecacuanha I have been unable to observe, as this medicine has been, in my practice, perfectly ineffectual.

COMPLICATIONS OF ACUTE DYSENTERY.

It has been already stated that the late epidemic dysentery appeared to be essentially distinct from typhus fever; nevertheless, in a certain number of cases, the two diseases occurred in the same individuals, so that some notice of this complication becomes necessary.

I do not recollect to have observed any instances in which patients labouring under dysentery contracted, during its progress, either true typhus or the epidemic fever. Fever these patients undoubtedly had, but it was the fever of dysentery; it was never accompanied by maculæ, nor did it run the regular course, or exhibit the ordinary complications of true typhus; nor yet did it evince a tendency to subside on particular days, or to relapse with almost unerring certainty, or to terminate by regular crisis, characters which belonged to, and particularly distinguished the late epidemic fever.

In a very few patients dysenteric stools occurred during the progress of the epidemic fever; but of these cases I speak doubtingly, as none of them proved fatal, and without *post mortem* examination I should hesitate to pronounce the *large intestine* to have been the seat of the organic mischief.

Several cases fell under my observation where dysentery arose during convalescence after fever; indeed, I would say that persons recovering from the epidemic fever seemed particularly susceptible of the epidemic dysentery. The usual period of attack was from the fourth to the eighth day of the convalescence.

Those who thus contracted dysentery, as a sequela of fever, laboured under great disadvantages, for with them active de-

pletion was out of the question. Mercury, however, when cautiously administered, proved eminently successful, even with this unpromising class of patients.

Pregnant women were not unfrequently the subjects of acute dysentery, their gestation affording them no immunity from its attack. Prompt measures were required with these patients, for the bowel irritation, unless speedily subdued, was certain to induce premature labour. Many of them bore both depletion and mercury satisfactorily, and obtained perfect relief from this treatment.

A considerable number of women contracted dysentery whilst they were nursing. Many of them refused positively to part with their infants, and continued to suckle them throughout their illness; and yet the disease was rarely, if ever, communicated to the infants, under circumstances apparently so favourable for its propagation. When the dysentery was severe, however, there was usually a complete suppression of the lacteal secretion, but it often re-appeared as soon as the complaint was controlled by mercury.

The subject of chronic dysentery will be treated of in a future Number.

ART. VIII.—*Observations on Enlargement of the Liver and Spleen, and on Pica, in Children.* By FRANCIS BATTERSBY, M. B., F. R. C. S. I., Surgeon to the Institution for Diseases of Children, Pitt-street.

[Communicated to the Obstetrical Society.]

THE following observations have reference to two causes of abdominal enlargement in children, of which it seems to me very strange that scarcely any notice is taken in the books which treat of their diseases.

In Dr. Copland's Dictionary of Medicine, it is stated, that "disease of the liver very seldom occurs until after puberty,

unless in the children of Europeans residing in the East Indies or other intertropical climates”(a). A similar opinion seems to be entertained by Drs. Maunsell and Evanson, as in their esteemed work no mention whatever is made of the subject.

It is true Dr. Cheyne, in 1802, in his essay on the weaning brash, states that, in every instance of it observed by him, “the liver was exceedingly firm, larger than natural, and of a bright red colour, and the enlarged gall-bladder contained a dark green bile;” the weaning brash being, he imagined, imputable to an increased secretion of acid bile, or rather to the morbid state of the liver which occasions that. The children were all affected with purging and vomiting, and they were generally weaned “before the eighth or ninth month.” In none of the cases, however which Dr. Cheyne has given, did he, previous to death, even suspect enlargement of the liver; while in all the cases I have noticed of enlarged liver, the enlargement was notorious. Of sixteen cases but three were affected with diarrhœa, one of whom had lientery, and none vomiting. In age they varied from eleven months to six years and nine months, and in the majority of them suckling was too long continued; in three for two years; the average for the entire was fifteen months.

Dr. Burns has given a brief account of hepatitis in infancy and childhood, the counterpart of which I am unable to discover in the cases I have witnessed. He describes elder children, “after a few weeks, as being sensible of a smell like rotten eggs, which they think comes from the stomach; then a little fetid matter is coughed up, which is followed by copious expectoration, or pus is ejected, as if vomited from the stomach”(b). Abscess of the liver, according to Dr. Stokes(c), is seldom met with in this country in adults. In children, according to my experience, it must be exceedingly rare; I have never seen it.

(a) Vol. ii. p. 618.

(b) Principles of Midwifery, including Diseases of Women and Children, p. 798. Sixth edition, London, 1824.

(c) Cyclop. Pract. Medicine, Art. “Liver.”

Under the name of hepatitis, MM. Rilliet and Barthez describe an affection approaching nearest to the one I allude to. "It is an affection very rare," they say, "in children." They have observed only six cases of it. "It commences by a slight febrile movement, accompanied by increased thirst and loss of appetite. At the same time, or shortly afterwards, an icteric tint is perceived, limited at first to the conjunctivæ, and slightly pronounced, but soon becoming very marked. The liver then augments in volume, passes the ribs, extends to the epigastrium, and, ascending in the hypochondrium, increases the dulness of that region. The tumour is ordinarily indolent, easily circumscribed when the abdomen is soft and flexible, but is defined with difficulty when it is distended. At the same time that the jaundice and tumefaction of the liver are manifest, the urine becomes changed, and of the colour of beer. The stools were few, liquid, and discoloured. At the end of a variable time, the febrile movement diminishes and disappears; thirst is no longer felt; the appetite is recovered. The tumour of the liver, which has progressively diminished, still continues; it, however, soon disappears. The icteric coloration is in part effaced. The urine recovers its normal colour, and at the end of twenty or thirty days all the morbid symptoms have disappeared"(a).

Rilliet and Barthez state, that this disease is of little severity, inasmuch as five of their cases, which were "primitive," recovered; the sixth, a tuberculous child, died.

The ages of their cases differed from mine, as they had two of four years; two of from five to five and a half years; one of twelve years; and one of fourteen years.

Now, of sixteen cases, whereof I have ascertained the termination of eleven, six died, two of them of scarlatina; four recovered; and one remains under treatment. The sexes are liable to be affected equally; as of the sixteen, the number of males and females was the same. As to age of those I treated,

(a) *Traité des Maladies des Enfants*, t. i. p. 578. Paris, 1843.

one was under one year; four from one to two years; six from two to three years; one from three to four years; one from four to five years; and three from six to seven years.

Two of these cases in which there was morbus cordis, and one scrofulous enlargement of the liver, I shall consider subsequently. In the other thirteen there was in general a slight febrile action, with tenderness on pressure over the liver; in some the stools were uncoloured, and the urine was deeply tinged. In ten, jaundice existed for some time; in five, ascites or anasarca; in one, phthisis; in one, pompholyx; and one was affected with laryngismus stridulus. The children were generally languid, wasted, and had a dirty jaundiced hue of the countenance. The abdomen was much enlarged, its veins were distended, and the liver could be most distinctly felt extending at various degrees of distance from the ribs to the pelvis. In one case only I received intelligence of pain being felt in the right shoulder. Instead of the enlargement of the liver disappearing in twenty or thirty days, I have seen it after a continuance of a year, one year and six months, two years, and even three years and a half.

CASE I.—*Hepatitis; Melæna; Death.*—James Donelly, aged six years, admitted under my care to the Institution for Diseases of Children, July 4, 1843; was weaned at one year and four months. He was jaundiced at two and a half years of age, when he first became delicate, and liable to attacks of diarrhœa. Since that time he has also had a great longing to eat cinders, ashes, and dirt. The abdomen has been swelled ever since. The liver is very large, extending into the left hypochondrium, and midway down to the umbilicus. Blue veins in the skin over it, and in the epigastrium, are very evident when he coughs. There is tenderness on pressure. Strong action of the heart. Stools yellow, passed with griping, and streaked with blood for the last few days; the urine is deeply coloured. He is very nervous and trembling. There is a slight bronchitis.

On the 31st July he seemed better; his looks and appetite

were improved, and the liver was less. After a few days' time his feet became swollen, his breathing short, yet he is without increase of the sputa, and he died after having passed, for a week, lumps of black blood by stool and vomiting. He was confined to bed during his last week only. When out amongst other boys he always avoided playing with them, lest they might hurt his belly.

The passing of blood by stool and the mouth is extremely curious. This is the only instance I have met of it, and it may, perhaps, be considered a sort of melæna, such as has been noticed by Lieutand, Bonetus, and Van Swieten, in cases of obstruction of the liver proceeding from the exhalation of blood on the surface of the excretory passages of the bile(a).

The following case was the result of the improper treatment of the child:

CASE II.—*Hepatitis; Recovery.*—Christopher Ling, aged two years, admitted May 3, 1843, was weaned at nine months, and then given in charge to a drunken and dissipated woman, who starved the child, and used to give him whisky. While under her care, when one year and three months old, he was found eating his own fæces. He has still pica, and desires to eat ashes. Skin pale and yellow, as if suffering from loss of blood. The liver is enlarged, with tenderness on pressure. Stools have been white for three weeks. Heart's action normal. After a little while he became jaundiced, and remained so two or three weeks. His feet were swelled, and his belly was big. He remained for several months under Dr. Croker's care; his liver did not become natural till the end of the year. He is now in perfect health. Liver not enlarged.

Dr. West has never met with hepatitis. He has seen cases of what "he believes to be hypertrophy of the liver. For the most part they were associated with very obvious indications of a scrofulous habit, but on one occasion only was there any serious disturbance of the general health, the child in that in-

(a) *Dict. de Médecine*, t. xiii. p. 238.

stance suffering from very severe diarrhœa, which had succeeded to a state of somewhat obstinate constipation”(a). This disease of the liver is described by Dr. Graves as “that state in which there is an increase of size in the organ, with induration and imperfect secretion, but without any remarkable tenderness. This condition in children is accompanied with irritability of the digestive organs, fretfulness, emaciation, loss of sleep, and impaired nutrition. It is only a form of general cachexy connected with the scrofulous diathesis, affecting secretion and nutrition in general, and the digestive and biliary systems in particular”(b).

One case, at present under my care, seems to be of this description, and not likely to be benefited by treatment. The girl, aged seven years, has an abdomen two feet five inches in circumference; ascites; liver distinctly to be felt, without any tenderness of it; no anasarca; said to be eight months ill; heart natural; some cough; her appetite is very good; her skin dry; the stools either palish or green. She has never been jaundiced.

I tapped this child on the 27th of February, assisted by Mr. Wilmot, and withdrew a gallon and a half of fluid. Her urine is deficient in quantity, and becomes turbid on cooling, but it again becomes clear on the application of heat, and it does not then coagulate.

I have already mentioned hypertrophy of the liver as having originated in disease of the heart in two children, one of whom,

CASE III.—A boy, aged three years and six months (to all appearance five years), had enormous enlargement of the liver, which descended four inches below the ribs. Posteriorly on both sides, and anteriorly on the left, was a single *bruit de râpe*. The heart's sound was distinct, but rough, at right side of the chest. Natural dulness of heart extended. Epigastric pulsation. Pulse 116, weak, small, and fluttering. Breathing oppressed; face

(a) On Diseases of Infancy and Children, p. 442. London, 1848.

(b) Clinical Medicine, p. 566. Dublin, 1843.

turgid; lips livid; veins of neck swelled; and the legs œdematous. He had had measles about eight months before, and within the last six months is said to have become affected with his present complaint.

The following case is very extraordinary, and worthy of reflection:

CASE IV.—*Pleuritis; Pericarditis; Enlargement of the Liver; Ascites.*—Peter Robinson, aged four years, the child of very respectable parents, came under my care August 13, 1847. He is a very lively and intelligent boy. His illness is said to have originated in his being brought one very cold day across the town, in the half-dressed style of children of the present day. He shivered for two or three hours after returning home. Although a beautiful boy before, he has since never been well; yet he has never been a day in bed, and never complained of his chest. His abdomen was then very full, the liver greatly enlarged, with effusion into the abdomen. His bowels were regular; stools dark coloured; spirits good.

March 13, 1848. Enlargement of the liver, which extends half-way from the ribs to the pelvis. It seems tender to the touch; ascites; stools yellow; eyes slightly tinged yellow; lips bluish; high colour of face.

January 26, 1849. Has been since in Baggot-street and the Richmond Hospitals; was tapped in the latter four months ago, by Mr. Adams, when four quarts of fluid were withdrawn; was salivated afterwards; is now well in flesh; countenance flushed as usual; slight yellowness of conjunctiva; ascites; abdomen two feet three inches in circumference; the liver to be plainly felt, extending half-way down to the umbilicus, and going over to the left side, smooth, with well defined edge. His legs never swell, but he has puffiness around the eyes night and morning; skin soft and perspirable; is very easy in the day, but gets severe fits of coughing at night, when he experiences difficulty in lying down. He has never been jaundiced, except the slight tinge of the eyes; stools have always been brown;

urine always natural; has never had pica; never complained of pain about his liver; there is nothing unusual in the lungs; nothing perceptible about the heart; spirits right good, and he runs about as if nothing ailed him. Has never had any of the diseases of infancy; his pulse is regular.

February 15th. Was in the Richmond Hospital since last report. Left it, and was brought home on yesterday, the lungs being choked with mucus and the lips blue. He died the same evening, retaining his consciousness to the last.

I examined the body about twenty-six hours after death:—coloration of the face; complete laxity of all the tissues; the skin and muscles very soft. Before opening the body I percussed the chest; the dulness of the liver seemed to me to ascend upwards as far as the fourth rib. The abdomen contained about four quarts of clear serum. The mesenteric glands were healthy; the peritonæum was unaffected. The pancreas was twice its natural size, and very hard, but not disorganized. The liver, red, and filled with blood, was one-half larger than natural; it was unaltered in structure, but between the convex surface of the right lobe and the diaphragm there was intimate cohesion by very strong and old adhesions; the gall-bladder was small, and contained some reddish-brown-coloured bile. The lungs on both sides were laterally and posteriorly connected by very old adhesions most intimately with the ribs; it was with very great difficulty I could separate them; the lobes were also similarly united. In front of the anterior and inferior part of the right lung there was some serous effusion; both lungs, the left especially, were in a state of interlobular emphysema, and were much gorged with blood; the lining of the bronchi was of a deep red colour, and the tubes were full of mucus. The lungs were free from tubercles. Three or four enlarged bronchial glands at the root of the lungs, the size of hazel nuts, were very hard, and filled with dry caseous material. The heart was intimately adherent to its pericardium, by thick and very strong adhesions; it was not enlarged; the valves were perfectly natural.

The enlargement of the liver in this case was purely secondary to the affection of the heart and lungs, which probably originated two years and a half before his death. Yet the child never betrayed any symptoms of having had such an affection, and I believe I may say that disease of his heart was not suspected by any one of the medical gentlemen under whose notice he was brought.

During the last few days his legs became swollen; the position he liked most to assume in bed was with his head lying on his hands, his body being supported by his elbows and knees. During the same time he was affected with vomiting and purging of colourless matters.

I made minute inquiry of his parents, both of whom assured me he never lay a day in bed in his lifetime; he never experienced until lately any difficulty of breathing, or anxiety referable to his heart or lungs, and no one was called to see him when he is said to have caught cold. At all events the case is highly instructive as to the injurious and even fatal consequence of exposing children, but half dressed, to the cold; and also is an additional proof of the difficulties in the way of diagnosing pleuritis and pericarditis in children.

In seven cases of hepatitis I noticed an occurrence of which I can find, with regard to children, no observation in the works treating of their diseases. The occurrence I refer to is pica, or an appetite for substances which are not food. It is known to affect pregnant women and chlorotic girls.

Pica, in children, depends probably on an altered sensibility of the nerves, and acid (though I can by no means prove an *aciditas esurina*(a)) state of the secretions of the stomach, owing to their being fed on depraved milk, or irregularly. As a general rule, this is one evidence of undue lactation, for of fourteen cases in which I noted it the average duration of suckling was twenty months; six of those cases were suckled two years and

(a) Burserius, *Institutes of Medicine*, vol. v. p. 372. Edinb. 1803.

upwards; and one of them, weaned at one year, was continued at the breast for seven months, during the utero-gestation of a succeeding child. I have remarked that these little children eat greedily of coals, cinders, ashes, lime off the walls, dirt, shoes, paper, and even their own ordure.

Children affected with pica are very delicate and wasted, their complexion is sallow, anæmic, and waxy, the abdomen enlarged. The bowels are generally too free; the stools are of all colours, green, yellow, black, or white(a).

A cause of enlargement of the abdomen, to which I am most anxious to draw attention, is tumefaction of the spleen, which is allowed by all authors to be peculiar to adult life. This in children seems to be equally the consequence of undue lactation. I have notes of seven cases, whose average duration of suckling is nineteen months; and, excepting two of these cases (the mother of one of which was obliged to become a patient in a lunatic asylum; and the second being the one I have already noticed as having been suckled for seven months, during the gestation of a succeeding child), the duration of the suckling of the remaining five is twenty-one months. According to M. Nivet(b), of eighty-eight cases in adults, sixty-two were men, and twenty-six women; of my seven cases, four were boys and three girls; these numbers exhibit an equal rate of the affection in adult and puerile life.

I am acquainted with the fate of six of these cases, of which three are dead; it is therefore a serious disorder. Patients exhibit the appearances characteristic of prolonged nursing. Their peculiar aspect is well described by Piorry(c): "When the spleen has been long affected the skin gets a dull aspect; a greyish coloration presenting sufficiently well a light-coloured creole shade, but with colours less warm and more ashy. It is the inte-

(a) Vide Report on Allotriophagia, by Dr. Volpato, in *Gazzetta Med. Lombarda*, No. 5, 1848; and *ibid.* No. 10, by Dr. Pignolo.

(b) *Archives Générales de Med.*, Mars et Mai, 1838.

(c) *Traité de Diagnostique et de Semeiologie*, p. 287.

guments of the face, especially, where this coloration is most remarkable. It is not the yellow ochrey colour of icterus, nor yet the discoloration of chlorosis ; it is a shade quite special, which has been very ridiculously called *bluish icterus*. Constantly, when this splenic tint is present, the sclerotic presents a dull *bluish white* under the conjunctiva." The conjunctiva is bloodless, and the patients manifest a perfect indifference to everything around them. They have a sickly, pallid look, and the wasting of the body is not in proportion to the paleness; they are truly chlorotic; they have invariably pica; the bowels are generally irregular; the abdomen is full. The patient's bulk will remain pretty good for a long time, although he will become blanched in a state of anæmia. The blood is not proper in quality; it is deficient in fibrine, and likewise in red particles. The peritonæum sometimes becomes affected, and produces ascites, which renders the detection of the spleen difficult, this existed in Case v.; and to a less degree, in a case of Dr. Croker's, where the patient died, apparently of phthisis, after having had for several months an enlarged spleen running obliquely across the abdomen. The diagnosis is generally very easy long before the spleen has attained a large size.

The heart is unaffected in those cases. It has been said that the spleen is often hypertrophied in scrofula and rickets. This, however, is by no means an established fact ; and when there is tumefaction of this organ there is no peculiarity about it, and the other viscera, especially the liver, are simultaneously engaged(*a*). This occurrence I have twice seen. Six of the cases I noted were aged from twenty months to two years. The seventh,—

CASE V.—*Hepatitis ; Enlargement of the Spleen ; Death.*—William Owens, aged six years and nine months, had also hepatitis. He was admitted November 29, 1848, under Dr. Croker. His bowels had been generally too free from the time of his being weaned, at one year and three months. He was jaundiced

(*a*) *Dict. des Dict. de Med., Art. "Rate."*

two years ago, and also last summer, when he was first observed eating lime. On the occasion of his being jaundiced he used to become sick, his breathing bad, and he complained of palpitations, and had then, as always, a great desire for drinking cold water. His stools were never white. A week before he came to Pitt-street he caught cold, and had considerable fever, with thirst, cough, and decided jaundice of the face. His belly was very large; the liver and spleen could with some little difficulty be felt enlarged, the former extending below the ribs. There was much œdema of the face and legs.

December 8th. The jaundice has disappeared; he is greatly swelled all over the face, abdomen, scrotum, and penis; he has also ascites. He lies on his back, wheezing and inert; his belly is very big; the stools are without colour; his pulse is tranquil; the heart's action is normal; the urine is natural in colour, and it does not coagulate by heat.

17th. Stools watery and bilious, not so frequent; pulse is very quiet; ascites remains the same, but the swelling in face and limbs has much subsided; the urine is quite natural. He lived to the 9th of January, 1849. He never lost his appetite for cinders, saying to his father, a few moments before he died, "Pa, I can't eat anything else."

This child complained of a stitch in his right side and shoulder before he was brought to Pitt-street, and in his illness used to get most relief by lying in bed on his hands and knees.

CASE VII.—*Enlargement of the Spleen*.—John Browne, aged one year and eleven months, admitted under my care July 9, 1847. This child is not weaned. His flesh is wasted and flabby. The skin sallow, dirty, earth-coloured. The belly is very large; the spleen being of an enormous size, and lying diagonally across the abdomen, reaching from under the ribs of the left side, down to the right os ilii. It can be felt most distinctly, having a well-defined outline towards the abdomen, as this is without effusion. The bowels are too free; the stools being green and watery.

He has been declining in health a year, and has suffered occasionally from irregularity of the bowels. His head is large; the fontanelles are open; the spine is rickety.

August 9th. The spleen is greatly diminished in size. He is only now weaned; his flesh and colour are returning; his appetite is good; his spirits are cheerful.

This child was seen by my friend Dr. Osbrey, as well as by the pupils in attendance on the Institution.

Dr. West takes notice of enlargement of the spleen, and connects it universally with intermittent fever, or malaria. Intermittent fever is, however, very uncommon in Dublin, nor do I know that it has been ever observed in patients before the end of their second year. I have only mentioned having seen seven cases, because I have noted no more; but I have seen it in several others, and in all arising from undue lactation. "The only instance of it," writes Dr. West, "which I have had an opportunity of observing, was presented by a little girl, six and a half years old, who had lived at Fernando Po from the age of two and a half years, having had dysentery at three years, and frequent attacks of fever subsequently. The enlargement of her spleen had first become apparent at five years of age, and when I first saw her, a few weeks after her return from Africa, it had attained so considerable a size, that her abdomen remained twenty-one and a half inches in circumference. The spleen in this case reached from under the ribs, quite down into the pelvis, and forward as far as the mesial line of the abdomen. Independently of the patient's history, which in a case of this kind would be of itself sufficient to prevent an erroneous diagnosis, the relations of the swelling were characteristic; for, although situated at the side of the abdomen, it did not extend backwards into the lumbar region, so as to fill it up completely, as an enlarged kidney would do, but a considerable interval existed between the posterior margin of the tumour and the vertebral column"(a).

(a) *Loc. cit.*, p. 446.

ART. IX.—*Objections to the indiscriminate Administration of Anæsthetic Agents in Midwifery.* By W. F. MONTGOMERY, A. M., M. D., M. R. I. A., Professor of Midwifery to the King and Queen's College of Physicians in Ireland.

I BELIEVE it would be no exaggeration to affirm, that the present age has witnessed no more remarkable event in medicine, than the application of anæsthetic agents, for the relief or prevention of suffering in painful operations.

But it would also be equally true to assert, that experience has proved that, like all other good things, this practice has its alloy of evil; and while we must acknowledge, with thankfulness and joy, the advantages and blessings which it has conferred, in saving so large an amount of human suffering, we cannot shut our eyes to the sad fact, that it has also *suddenly* cut short life in many instances, and at a variety of ages, from early youth to mature manhood.

And, in many instances also, where life has not been compromised, the administration of these drugs has produced symptoms of the most alarming and dangerous kind.

Such facts, which are perfectly incontrovertible, must, of necessity, moderate our enthusiasm, and render us cautious in the general use of such remedies, even where we see a pressing necessity; and when, in addition, we consider that there are certain morbid conditions of the system, of a kind which may but too readily escape our notice, and which increase to a frightful degree the danger to be apprehended from these powerful agents, it seems impossible to avoid the conviction that their *indiscriminate* administration, in any large class of cases, must be fraught with hazards of the most alarming character.

Impressed with such opinions, I felt it to be my duty to lay before the members of the Dublin Obstetrical Society, on a recent occasion, when they did me the honour to place me in the chair at their opening meeting, my views on the indiscriminate

administration of chloroform in natural labour; which I felt to be the more imperative upon me, as this subject had been pressed, or rather forced, not only on the profession, but the public, with an overweening zeal, quite unparalleled, as far as my memory affords me recollections of the introduction of new remedies.

A perfect avalanche of pamphlets and publications, in all forms, advocating and urging the adoption of this new practice, has fallen on the land; and these, instead of being confined to the hands of medical men (their only legitimate destination, as they are the only competent or safe judges of such a matter), have found their way freely into the drawing-room and the boudoir of private life; nay, it is even the fact, that some have so far forgotten the delicacy and reserve with which such matters should ever be treated, that paragraphs have been inserted in the public newspapers, announcing the delivery of ladies, "while in a state of insensibility from chloroform;" and those medical men who have hesitated about, or rejected the indiscriminate use of chloroform in natural labour, have been set down as deficient in energy, or in feeling and humanity.

Well, there is at least the charm of novelty in our being told that we of this land, whether as physicians or as men, are indifferent, cold, and unkind in our feelings towards the gentler sex, unwilling or reluctant to spare them pain(a), and

(a) Dr. Simpson has prefixed to his last pamphlet on "Anæsthetic Midwifery," a passage professedly quoted from Shakspeare, making, apparently, a pathetic appeal against the cruelty of those who refuse to give chloroform; it stands thus:

" I do think you might spare her,
And neither heaven nor man grieve at the mercy."

MEASURE FOR MEASURE.

Now, I beg to observe that this passage is not to be found in the play here referred to; but the one for which it is substituted is part of Isabella's intercession with Angelo to spare the life of her brother Claudio, and her words are:

" I do think that you might pardon him,
And neither heaven nor man grieve at the mercy."

MEASURE FOR MEASURE, *Act II. Scene 2.*

careless or regardless of their sufferings. If this be really so, I can only reply,

“*Tempora mutantur et nos mutamur in illis:*”

it certainly used to be otherwise.

We have been told, with somewhat less than courtesy, that, while facts take five years to reach London, they require ten to arrive in Dublin. Where they travel *from* is not expressly stated, but I presume we can have no difficulty in guessing: and while, fortunately, we need but simply deny the implied imputation, we cannot but smile at the self-complacency which thus arrogates for itself and its locality the possession of all wisdom, from whence it is to radiate,—though by such slow degrees,—until it illumines with its brightness the darkness of surrounding nations, and gradually enlightens the ignorance of such obscure and illiterate places as London and Dublin.

Be it so, if so it is; but for myself I must say, that I sincerely rejoice to think that here we do not too readily run, with schoolboy impetuosity, after every butterfly theory, which with gaudy wings is seen fluttering through its hour of evanescent life in our social atmosphere.

Instead of lending our aid to force or even urge rash proposals on our confiding patients, I hold it to be our solemn, bounden duty to stand as faithful and watchful guardians between them and their adoption of every new-fangled remedy which the ingenuity, or fashion of the day may place within their reach, and plausibly tempt them to make use of, until, by cautious trial and careful examination, we have fully satisfied ourselves of its safety and beneficial effects.

And I most sincerely hope and trust, that the day will never be when it can be said of Dublin, as is now declared of Edinburgh, “that we use it [chloroform] here constantly in midwifery; its omission being the exception, and a rare exception, to the general rule of its employment.”

I believe that few, I hope that none, will ever be found so bold or rash, so enthusiastic, or so heedless of consequences, as

to keep every woman confided to their care in a state of stupefaction and unconsciousness, with her blood blackened, and her brain poisoned, from the beginning to the end of her labour,—a plan which, although at first recommended, is, I believe, no longer practised even by the warmest admirers of anæsthesia in midwifery; and yet, if not so carried out, the professed object of this mode of treatment, making labour painless, is not accomplished. This point I shall notice again.

But I am happy to say that, so far as this country is concerned, this mode of managing natural labour has, as yet, found but little favour with us; and amongst the better educated class of women, the great majority are, in general, decidedly averse to it. Many have expressed themselves to me in terms of the strongest reprobation of a plan whose professed object was to deprive them of reason and consciousness; and I can state as a fact, on what I believe to be the best authority, that the same observations would equally apply to London as to Dublin.

In the publications referred to it is plainly suggested that the time is come when medical men are no longer justified in withholding chloroform from every woman in labour; that medical men may object, but that our patients will *force* it from us, whatever we may think of its fitness: so that, although we are to encounter all the responsibility, we are to be allowed no discretion.

Whoever submits to such dictation gives up his independence as a man, and, as a physician, acts dishonestly towards his patient, and compromises the honour and dignity of his profession.

This principle has been so far imbibed as to induce some patients to seek to exact beforehand a stipulation in conformity therewith; but I feel great pleasure in adding that, in instances within my own knowledge, where this demand was not complied with, the refusal has been ultimately commended by the parties concerned, and their friends, as highly creditable to the

medical man who declined to do what he did not believe to be right, or to promise what might not be for his patient's good.

And here let me suggest to the junior members of the profession, that they will generally find it thus through life. The man who steadily refuses to act against the dictates of his deliberate judgment and conscience, may—nay, certainly will often incur present inconvenience, annoyance, and pecuniary loss; but, in the end, he will be richly the gainer, in the peace of mind and satisfaction arising from the consciousness of having acted honestly; and amongst his fellow-men he will have higher reputation and an honourable reward. A true philosopher has said: “Others may be impatient, but we must possess ourselves, and act upon principle. The event will justify our conduct; and, though there may be temporary dislike and blame, if we do what is right, there will be permanent favour and reputation”(a).

The most extraordinary and varied efficacy has been attributed to this remedy, and effects the most totally opposite ascribed to its use.

By one writer we are told that, if uterine action is excessive, chloroform will abate it; by another, that if feeble it will strengthen it, and add new vigour to each parturient effort.

By one it is asserted, that it relaxes the tonicity of the uterine tissue, and thus renders the introduction of the hand more easy; and by another that it tends to control uterine hæmorrhage.

By several it is stated, that it relaxes in a remarkable degree the perinæum and external parts, and so diminishes the chance of their being torn; while a writer in its favour,—as quoted by Dr. Simpson,—tells us that this supposed effect of it appears to him “at least uncertain and accidental,” and that, out of twenty-five cases in which he used it, he had two instances of rupture of the perinæum; and another writer in the

(a) Denman.

same work says that the influence of this drug, by accelerating the second stage of labour, especially towards its termination, by removing the resistance made by the muscles at the outlet of the pelvis, entails a risk of laceration of the perinæum in certain cases, "unless very great care is taken."

In several instances, the administration of chloroform has been followed by symptoms of a convulsive character, and in some, by actual convulsions, an affection to which pregnancy and labour peculiarly predispose the system; and yet, we find another writer in a public journal recommending chloroform in the treatment of puerperal convulsions.

" Can such things be,
And overcome us, like a summer's cloud,
Without our special wonder?"

The favourable results in surgery have been appealed to, as triumphant proofs of the success and safety of this drug; and as a cogent reason why it should be equally used in midwifery. But the circumstances attending the administration of chloroform for the performance of a surgical operation, and for the prevention of labour-pain, are widely different. In the former it is given to enable a patient to bear the sudden infliction of acute pain, for which, broken down, perhaps, by disease and suffering, weak in mind and body, he could not summon fortitude sufficient to submit voluntarily to the fresh infliction of torture from the surgeon's knife, without wincing, and thereby seriously obstructing, or perhaps altogether defeating the operation intended for his benefit, even though he be perfectly convinced that by no other human means can he escape death. And then, again, it is only necessary to keep such a patient under the narcotic influence for a few minutes.

Now labour, although accompanied by pain, is surely not a condition of disease; nor is it a process, under ordinary circumstances, likely to take away or shorten a woman's life, or calculated seriously to compromise or interfere with her comfort after its termination; no—assuredly, the God of all wisdom

and goodness has far differently ordained it; but if she is to be saved from the pains of it, she must be kept under the narcotic influence of chloroform for hours, perhaps many hours, and that, too, under the very condition of her system most likely to excite or aggravate the evil influences of the drug.

I totally deny then that "what holds good in relation to pain in surgery, holds good in relation to midwifery." No two things having a partial resemblance can be more essentially dissimilar than the pain suffered in a surgical operation and the ordinary, natural, physiological pain of labour, repeated at intervals more or less regular, leaving, in general, the patient, in those intervals of their returns, free from suffering, *in perfect health*, and, perhaps, full of cheerfulness, or calmly sleeping; and as these pains increase in force and intensity, they carry with them the sweet consolation, so often thankfully expressed by the sufferer, that she knows she is all the nearer to the consummation of her fondest hope, to see with happy heart, and clear unclouded brain, her new-born treasure smiling beside her.

A surgical operation is no part of a natural process; and there is generally in the mind of all, an instinctive horror of the surgeon's knife,—ay, to such a degree, that even the strong man and the brave, who many a time, perhaps, has led his followers through the fiery struggle of the battle-field undaunted, will recoil unnerved and sickening from the sight or touch of it; and as that knife slowly divides the tender skin, the quivering muscles, and the shrinking nerves, his spirit quails and sinks before the suffering which promises no other boon but to save him from a life of protracted suffering, or from immediate death. A surgical operation is finished in a few minutes; but if it were, like labour, to consist of several successive stages, which could only be accomplished after many hours' duration, what patient would survive its performance?

Does the sedative influence of chloroform, administered to a woman in labour, interfere with the activity of uterine con-

traction?—is it liable to impair, interrupt, or suspend the expulsive and contractile power of the organ?

These are obviously questions of the most vital importance, considering, that on the perfection of the expulsive and contractile energy of the uterus depends not alone the progress and completion of the labour, but also the safety of the mother.

That chloroform, when given so as to produce its *full effect*, is apt either to suspend or greatly impair the activity of the labour, is now, I believe, admitted on all hands. But is it liable thus to impair the uterine energy, when given only in such moderate doses as have the effect of soothing the patient, and decidedly mitigating her suffering? I have no hesitation in asserting the affirmative; and I think this is now beginning to be admitted even by the most ardent supporters of anæsthesia. “The degree and depth of anæsthesia,” says Dr. Simpson, “which different patients are capable of bearing, without the irritability and contractions of the uterus being impeded, appear to differ greatly in different persons. In some a very deep state will still leave the uterus almost or altogether unaffected; in others its action is interrupted by a comparatively slight degree of the anæsthetic state”(a).

Dubois, long since, announced this effect of the inhalation of ether during labour, as happening “occasionally.” My own experience with chloroform has shown me that it is of *very frequent occurrence*; and I have been informed by several medical friends, that their experience on this point coincides with mine.

But it has been urged on the other hand, that, to avoid this, we need only give it, just to such an extent as to render the patient so far insensible to the pain, that she is only conscious of the uterine contraction as a fact, but not as a suffering. Now I know as an absolute fact, which I have witnessed in several instances, that we will often find the uterine energy decidedly

(a) *Anæsthetic Midwifery*, p. 18.

impaired by the sedative effect of the chloroform, and our patient still remain perfectly sensible of the pains.

My own observation on this point has been, that if the patient be brought under the influence of chloroform before the os uteri is dilated, or at any time, with the uterine energy feeble, we will then find, that it will diminish that energy still more; and in proportion as the calming effect of the drug is produced, the expulsive force of the uterine contractions will be impaired, and the labour retarded. And I believe it is now admitted by even its warmest admirers, that chloroform, given so as to produce its full effect, will frequently paralyse the uterine energy, even when most active; and in proportion to the degree in which this enervation of the uterine vigour is thus induced, and especially if it occur towards the conclusion of the labour, the patient is unquestionably thereby more or less predisposed to imperfect uterine contraction after the birth of the child, and, consequently, to retained placenta and hemorrhage. Such has been my experience in this matter, and I have heard from others many facts corroborative of the occurrence of such results.

I very recently saw labour interrupted by so moderate an administration of chloroform, that the lady continued talking of the delightful sensations she experienced; but, at the same time, the uterine contractions lost all their former energy, returned less frequently, and lasted a shorter time, in consequence of which I withheld the chloroform altogether; but the uterus did not, for some hours, regain the same degree of activity it had previous to the inhalation of the sedative: and I have witnessed the same result in other instances.

Experience has now shown, that in order to secure to the patient *complete immunity from pain*, chloroform must be administered to such a degree as to take away reason and consciousness; and, when so administered, it is liable to induce apoplectic stertor, convulsions, partial paralysis, impairment of uterine contractile energy, and other still more formidable consequences.

The bare possibility of producing, in any patient, such symptoms as these, by an agent however valuable, renders it absolutely imperative that we should first see clearly the *unequivocal necessity* of administering it; and, secondly, that we should carefully distinguish the cases, in which the more serious symptoms arising from its use are likely to occur, as where there are already existing signs of determination to the head, or disease of the brain, lungs, or heart.

Now I think these observations apply with peculiar force to the use of chloroform in labour, in which, in order to accomplish the object proposed, it must be administered for so much a longer time than when given for other purposes; and it must not be forgotten that in many of the cases of labour which come under our observation in the course of practice, we have little or no exact knowledge of the patient's previous history and state of health, so as to be aware how far she may, or may not have exhibited symptoms of those formidable affections just alluded to, and which render the administration of this drug an experiment of such alarming hazard.

It is a well-known fact that, in the immense majority of instances, women pass through the ordeal of labour, even when severe, with impunity, and recover well; and the sorrow and the sufferings of the past struggle are soon obliterated from the mind, by the sunshine of the infant's smile.

If, therefore, a powerful medicine be administered, except for some strong reason, some unusual or pressing necessity, and that evil consequences ensue, the remedy so administered will naturally be regarded as the cause, and the person who gave it as the author of whatever injury may follow, and perhaps not without good reason. Now let me not be mistaken, or supposed to wish to deter any one from using whatever remedy he, after due consideration, conscientiously believes necessary and likely to do good, under the existing circumstances, but at the same time not fraught with qualities equally or more likely to do harm eventually. Very far from it. All I wish to inculcate is, the

paramount importance of carefully considering, and being convinced of the *necessity* for its use, and that it shall not be abused; which I consider to be glaringly the case when such a subtle and powerful agent as chloroform is administered to a woman in perfectly natural labour, going on safely and favourably, and perhaps with every indication of being soon released from her trouble, with no other object than that of rendering her insensible to a part of the ordinary degree of pain which the Almighty in His wisdom has connected with the process of parturition;—while she is, at the same time, exposed thereby to the risk of consequences, especially in inexperienced or careless hands, which may suddenly cut short her existence, or seriously affect her future health.

I believe I am fully justified in saying it is now certain, beyond all doubt or cavil, that in several instances the administration of chloroform, for a variety of purposes unconnected with labour, has caused death—and that, *sudden death!*—and is it probable, is it reasonable to expect, that women in labour shall constitute the only class exempt from the dangerous influence of this drug?

Under all circumstances “it is a fearful thing to die;” but it is doubly awful when death comes suddenly, and finds the being who is about to pass from Time into Eternity utterly bereft of sense and reason, and without the power even to ejaculate, with the disciples in their hour of danger, “Lord, save me, I perish.”

An observation of Professor Meigs, of Philadelphia, in his letter to Dr. Simpson, is so entirely consonant with my sentiments on this matter that I here adopt it as my own: “I readily hear,” says he, “before your voice can reach me across the Atlantic, the triumphant reply, that an hundred thousand have taken it without accident. I am a witness that it is attended with alarming accidents, however rarely. But should I exhibit the remedy for pain to a thousand patients in labour, merely to prevent the physiological pain, and for no other motive, and if I should in consequence destroy *only one* of them, I

should feel disposed to clothe me in sackcloth, and cast ashes on my head, for the remainder of my days."

Now the object for which it is so eagerly proposed to incur the risks already alluded to is simply to do away with the pain attending natural labour. Then the question presents itself,—is the ordinary pain of labour, *in general*, so great in amount, so intense in its character, or so injurious in its consequences, that we would be justified in running any risk to avoid it, or rather a part of it, for the whole of it cannot be annulled? I think universal experience would answer these queries in the negative.

Experience has shown that very rapid, easy, and comparatively painless labours, besides the risk of present injury which they entail, are by no means those least liable to serious casualties during their progress, or from which women recover most favourably.

I have met with but one instance of a woman who bore children without pain. That lady had eight children, and she never gave birth to one of them without being in the most imminent danger of losing her life from hemorrhage.

It seems to me that the greater pain and risk encountered by the human female in parturition are intended (as they certainly are calculated) to teach us our mutual dependence on each other for kindness and assistance, and thus to draw closer the bonds of love and attachment which should unite man to the cherished object of his dearest and holiest affections.

In the progress of ordinary labour our judgment is assisted by the natural expression of the pain suffered, as indicating its true character and efficiency, and so affording a guidance not lightly to be dispensed with; and where we are obliged by adverse circumstances to interfere artificially with labour, whether by instruments or otherwise, pain, *unduly* excited, is the warning voice which tells us that we are doing something not as we ought, and calls to us to desist or change our course of action; and woe betide us, if we disregard the warning.

I was once consulted about a case where the gentleman in attendance told me himself that he had attempted, as he thought,

to rupture the membranes with his pointed nail, and only desisted in consequence of the patient's complaints that he was cutting her; which was the fact, as he was endeavouring to perforate, not the membranes, but the distended and attenuated anterior section of the cervix uteri. In this instance, had the lady been in a state of unconsciousness, we can hardly doubt that mischief of a very serious kind would have ensued.

It has been asserted that pain is the agent which destroys life in protracted labours, because it can be shown that the mortality is in direct proportion to the length of time the labours lasted; and it is alleged that, if the pain of parturition were cancelled by anæsthesia, we would have more favourable results, that we would "increase the chances of a more speedy and a more healthy convalescence." Now, I would ask, does any one believe that, when a woman dies of the effects of a protracted labour, it is the pain suffered which causes her death, and not the long-continued struggles, and efforts, and pressure on soft parts, causing fever, vascular congestion, inflammation, and sloughing, &c.?—or can we believe that chloroform could annul or remove these agencies which really do the mischief, even were we rash and reckless enough to keep the woman under its influence throughout the lengthened ordeal of her tedious labour?

Do women recover better who have been treated with anæsthetic agents during labour, and are there fewer deaths among them? The results recently published by Dr. Simpson(*a*), of 245 cases of labour, all treated with anæsthetic agents, of which five died, or one in forty-nine, most assuredly do not confirm such a doctrine.

From the way in which this subject has been rung in the ears of society, an idea has been engendered in the public mind that by means of chloroform labour may be divested of *all* suffering, from beginning to end; that the moment labour commences the woman need only begin to inhale this "sweet ob-

(*a*) *Anæsthetic Midwifery*, pp. 13, 21.

livious antidote," and so continue in a placid slumber until all is over; "and then awake, as from a pleasant sleep," to receive her child, and the congratulations of her friends.

I suppose I need hardly say, that such an elysium of labour is only to be found in print, or in the imagination. I believe that no one who has sufficiently tried chloroform, and watched its effects, now gives it in the first stage of labour, except in an extreme case; its administration is reserved for the expulsive part of the process, by which time the patient has passed through that portion of labour which, with the exception of the actual birth of the child's head, is in general the most intolerable part of it, namely, while the dilatation of the os uteri is taking place, under the influence of what are popularly termed "the grinding pains," at which time the suffering is apt to be almost incessant, and of a most irritating and insupportable character, sometimes disturbing the nervous system to such a degree as to produce temporary delirium. Chloroform given at this stage may relieve the pain, but it will almost certainly in the same degree impair the action of the uterus, and retard the progress of the labour; and even if it did not, I believe very few would now consent to keep their patients in a state of stupefaction for twelve, twenty-four, or "*twenty-eight and a half hours*," as one gentleman tells us he did!

I entirely agree with Denman that labour is not "a trick to be learned," but "a regular process of the constitution," and "that women may be assured that the best state of mind they can be in at the time of labour is that of submission to the necessities of their situation." "Instead, therefore, of despairing, and thinking they are abandoned in the hour of their distress, all women should believe, and find comfort in the reflection, that they are at those times under the peculiar care of Providence; and that their safety in childbirth is insured by more numerous and powerful resources, than under any other circumstances, though, to appearance, less dangerous."

In childbirth, as in many other trials, it is the merciful dispensation of an all-wise God, that, though "heaviness may en-

ture for a night, joy cometh with the morning," when, the trouble past, the happy mother rejoices in safety over her new-found treasure. How sad, how awful the reverse, should we, by an unnecessary and indiscriminate interference, substitute sorrow and mourning for this holy joy; or spread the gloom of death over a household which would otherwise have been gladdened with the sunshine of happiness and thanksgiving.

I attach no value to what are called the "religious objections" to the use of this remedy; but, at the same time, I am very far from approving of some of the arguments which have been used against those who entertain such objections; for instance, I think it is unreasonable and indecorous to stigmatize as "wild and fanatical" an attempt dispassionately made to discuss the question; and I must add, that I read with indescribable amazement Dr. Simpson's allusion to the removal of Adam's rib, in which the Almighty Creator of heaven and earth, and of all mankind, in the accomplishment of a great mystery and miracle, is held up to us as our precedent and example in this mode of practice, as having thrown Adam into a deep sleep, before performing on him "*the first surgical operation ever performed on man.*"

A cause which requires such assistance as this, one would suppose, must be in great need of support(a).

(a) Dr. Simpson has prefixed to his pamphlet in answer to "The Religious Objections" to the use of anæsthesia, two texts, which are obviously intended to construct from Scripture an argument for the use of chloroform, or some such agent, for the abolition of pain. These are the passages:

"For every creature of God is good, and nothing to be refused, if it be received with thanksgiving."—TIM. iv. 4.

"Therefore to him that knoweth to do good, and doeth it not, to him it is sin."—JAMES, iv. 17.

Now I think I am justified in saying that the statement and inference therefrom here intended are, that chloroform is a good thing, and to be gratefully received; and that, therefore, whoever refuses to give it thereby commits sin. I beg to observe that the use here made of the first text is a complete perversion of the meaning of the Apostle Paul, who is there speaking of articles of food,—meats from which he declares there is no necessity for abstaining. And with reference to the quotation from the Apostle

To sustain fully the "religious objections" to the use of chloroform in labour, we should equally deny the propriety of using all, or any other means of shortening or alleviating the sufferings of the parturient woman,—an absurdity too glaring to require comment.

I believe, and am convinced, that in adding pain and suffering to human parturition there was, on the Almighty's part, not alone wisdom, but, as in all His other providences towards us, goodness and mercy also;—will any one deny this? But, to use the same words which I addressed to the Obstetrical Society formerly, "I know that the sorrow and the suffering are permitted to be abridged in their duration, and alleviated in their degree, by the judicious interposition of a well-timed assistance"*(a)*; I feel persuaded that all other pain, and sickness, and suffering, are equally ordained of God, as the pain of labour; and nobody, I believe, doubts that man is permitted to use all safe and proper means for their relief. Nay, he is endowed by his Maker with the special attributes of mind and reason, by which he may, in addition to many other noble privileges conferred upon him, judge and discriminate, and determine on the fitness or unfitness of each remedial agent, and use or reject them accordingly. And the medical practitioner is called upon by every law, divine and human, to exert his utmost endeavours to relieve pain and disease, by whatever remedies he believes to be most suitable and efficacious, but at the same time safe in their present use, and not likely to be indirectly or ultimately injurious to the system.

Nobody, I believe, has ever objected, on religious grounds, to the use of the forceps in midwifery*(b)*; or to turning a child

James, which is placed as if it were a direct conclusion from the other, I beg to say that it has no more connexion with it, than exists between the two texts by which some one undertook to prove, that suicide was recommended in the New Testament.

(a) See Dublin Medical Journal, former series, for 1844, vol. xxv. p. 182.

(b) But what should be justly thought of the man who carried instruments about with him on all occasions, and in every case of natural labour

when misplaced, or for other reasons rendering such a step imperatively necessary for the patient's benefit. Nobody, I believe, has ever doubted that it is lawful for all, whether physicians or not, to use means to retard the approach, or avert the stroke of death; although death is, by God's decree, appointed unto all men.

But the real question is this, are we to interfere indiscriminately with every perfectly natural labour at which we are present, no matter how healthy and favourable its character, or how expeditious in its progress, and, for the sake of enabling our patient to avoid a part of the ordinary amount of pain, however moderate, or in compliance with the solicitations of the timid, the demands of the impatient, or the caprices of the fanciful, administer on all such occasions a subtle drug, of uncertain effect, but of great and dangerous power,—a medicine which experience has fully proved to have, in very many instances, the effect of impairing the uterine energy and retarding the labour, and the full administration of which has been frequently followed by still more unfortunate results?

made use of the forceps or lever, because he *could* thereby diminish the amount of suffering, by abbreviating its duration, and *might*, in many cases, use them with safety to both mother and child? And if, as a preliminary to such a proceeding, he deprived his patient of consciousness by administering chloroform, he might not only shorten her labour, but save her all further pain; but one trembles to think what would be likely to be the results of such practice. And yet, if matters continue to progress in their present course, I can not only easily imagine, but would fully anticipate, that there may, ere long, be found some one who will not hesitate to conjoin the two modes of relieving and shortening the suffering of labour, and proceed to practice with a bottle of chloroform in one pocket, and a pair of forceps, or some other mechanical contrivance, in another; and while, by means of the former, he throws the patient into a state of insensibility, and so annuls her pain, will, with the latter, curtail the duration of her labour by some one, two, or three hours, and then leave her, perhaps, to mourn in bitter sorrow for years to come, the extraordinary benefit and saving of suffering derived at his hands. Might we not reasonably anticipate of such a one that he would indeed be likely to

“ Play such fantastic tricks before high heaven
As make the angels weep.”

The common sense of mankind will, I feel as thoroughly persuaded as I sincerely hope, give an emphatic negative in reply to such a proposal.

Now let me observe, in conclusion, that while I object, and most strongly and solemnly, to the *indiscriminate* administration of chloroform in natural labour, I fully acknowledge its value and utility in general in obstetric operations, such as instrumental delivery, turning a child in utero, or the removal of a retained placenta, and also in some peculiar circumstances of natural labour, independent of any operation. Thus, I would give it in a case where the pain greatly exceeded its usual amount, and became intolerably severe. I would also use it in those cases occasionally to be met with in practice, in which a severe nervous pain is superadded to the ordinary pain of labour.

Thus, in one case, such frightful pain was endured along the course of the sciatic nerve that I thought the lady would have lost her senses, although a woman of a steady, sensible, and strong mind, and naturally very patient.

In another instance, a spasmodic pain attacked the sphincter of the rectum with such overpowering intensity and torture as to render the lady absolutely frantic. In such instances as these, I would certainly have administered this remedy, had it been known at the time of their occurrence, which, however, was before its introduction into practice.

With regard to its use in obstetric operations, while I fully acknowledge, as I have already stated, its value and utility as a *general rule*, I must add, that I think there are circumstances which should modify our *universal* adoption of it even for such purposes, lest we should for the sake of avoiding a temporary inconvenience, run the risk of entailing a more serious and permanent evil. Thus, for instance, in a case of retained placenta with hemorrhage, and a very flabby, uncontracted, and inert uterus, I think we would better consult the ultimate safety of the patient by omitting it, and subjecting her to the temporary suffering of passing the hand into the uterus, which

would thereby be more effectually stimulated to contract, and to retain its contraction.

And again, I would say that, instead of commencing, in all operations with the crotchet, by first putting the patient under the influence of chloroform, and throwing her into a state of insensibility, it would, in my judgment, be more judicious to wait, before giving it, for a reasonable time after reducing the head, to see whether the uterine energy might not be sufficient by itself to force down, and perhaps expel the diminished head, a result always most desirable, for many important reasons, and which we will certainly be much more likely to impede than promote, by placing the patient in the first instance under the paralysing influence of chloroform.

Then again, in all such cases of instrumental delivery, we must never forget that our patient, if under the full sedative influence of chloroform, has lost all power of warning us of any accidental error which we may commit in operating, of which her pain would warn her, were she not in a state of insensibility; it, therefore, behoves us, under such circumstances, to use the utmost caution and circumspection (at all times most necessary, but here in a far greater degree), lest, without being aware of it, we should inflict an injury which our best efforts afterwards might fail to remedy.

The foregoing pages (with the exception of the notes) contain the observations on this subject offered to the Obstetrical Society on the occasion already referred to, and which I now publish in consequence of a request to that effect made to me by the Committee of that Society.

For those who have advocated opposite opinions I entertain all the respect and deference to which they are entitled; but, at the same time, I firmly believe they have acted with a "zeal not according to knowledge;" and I felt it to be my duty, when addressing the young, and ardent, and inexperienced, to warn each among them against being dazzled by a delusion, or seduced by an *ignis fatuus*, which might lead him far astray from the path of safety, inviting him to aim at results which

can only be attained at the expense of indiscriminate, and, therefore, unjustifiable interference with natural labour, by which, sooner or later, to use the words of Denman, "He will be taught, although he may acquire momentary approbation by endeavouring to remove every little present inconvenience, that diseases then far distant will be attributed to his misconduct, and sometimes not without reason."

ART. X.—*Report upon the recent Epidemic Fever in Ireland.*

(Continued from page 126.)

PROVINCE OF ULSTER.

Summary of Reports.

Dr. Betty, of Lowtherstown, continues:—

"In *proportion*, the disease was more fatal in the better classes than among the poor. I never saw purpura but in one case, which recovered. All ages were indifferently attacked, but females more frequently than males. In the aged, with chronic affections of the lungs or liver, it was usually fatal. Relapses were seldom seen; I never remarked petechiæ in them. Some individuals of the same family had the disease milder than others, although subject to the same infection. Crisis usually appeared with perspiration, but sometimes the exact state could not be ascertained. I never had a case with epistaxis; any case attended with convulsions was fatal.

"I never observed any enlargement of the spleen, as I had no opportunity of making a *post mortem* examination. I never had any case with bed-sores in my hospital, as I make the nurses be very watchful and particular as to cleanliness with the patients. About three weeks, I think, is the usual time the patients were in convalescence.

"I have no doubt, if the disease is seen in time, that an emetic will cut it short, and that convalescence may be expected on the third, fifth, or seventh day. If the disease is not checked, I usually treat it in the common way of fever, watching any extraordinary symptoms. General bleeding I think a very bad

practice in this epidemic, and it seems that, if there is recovery *at all after it*, it is always very slow. Mercury I have seldom had occasion to use, except where the liver was deeply engaged. Wine I always found to hasten recovery. Opium I have tried without any good result, although given with antimonials."

From Cookstown, in the county Tyrone, Dr. Henry Graves has forwarded the following report:

"In the spring and summer of 1847 I had an opportunity of seeing more than 600 cases of fever. Upwards of 200 of these were under my own care, some in the temporary fever hospital at Luney, in the county of Londonderry, but the great majority as out-patients of the Magherafelt Dispensary, of which charity I had charge for some time, during the illness and convalescence of Doctor Vesey, who narrowly escaped falling a victim to the disease.

"When my attendance at the charity commenced, the epidemic was raging with its utmost violence. In May, June, and the beginning of July, the scourge was at its height; towards the end of the latter month it began to decrease, and through the months of August and September, with one or two slight and unimportant exacerbations, it continued to subside, though for nearly half a year afterwards the country did not attain its usual state of health.

"This epidemic did not confine itself to any particular class of society; still I think I may say that the ratio of susceptibility (if I may so speak) was in proportion to the exposure; *e. g.* the medical attendant of the dispensary and poor-house, the masters (one died), the two fever nurses (one died), the school-master, the baker, the porter (three times seized—died), in fact nearly every official brought into the vicinage of infection, suffered sooner or later. I may mention a curious fact, that not one of the poor-law guardians, a class of men who, in other parts of the country, were cut off in numbers, had fever; and this I attribute to their meetings being held in the market-

house, which is more than half a mile distant from the union workhouse.

“ But from first to last the lower classes were those who suffered most. Deprived of their natural and accustomed food,—reduced almost to the lowest amount of nourishment on which human beings can exist,—cooped up in miserable, filthy, ill-ventilated, and worse-drained hovels,—never, in their most dire distress, refusing admission to the poorest and most abject mendicant,—how could they escape? Yet, strange as it may appear, these poor creatures fared best in the end, in proportion to the numbers attacked. With ordinary care the mortality among them was far smaller than among those better off in worldly circumstances. I cannot call to mind any remarkable differences in these cases, save that the poorer classes were rather more liable to enteric subacute inflammation, whilst among the more wealthy, secondary affections of the lungs, and less commonly of the head, were not unfrequently met with. When the patient had for some time been in want of sufficient food, when starvation bordering on inanition had occurred, we looked for fever as almost certain; and here it was noticed that petechiæ often, maculæ more usually, and not unfrequently blue and purple blotches, resembling scurvy (such as those described by the late Dr. Curran), with swelling and pain in the extremities, were met with: the spots showing themselves very early, and the extremities being more generally affected during convalescence. Typhoid symptoms appeared unusually soon in almost every case, and I imagined that the greater the starvation and want the sooner did they set in. Diarrhœa was very common, coming on at all periods of the disease, but when treated promptly there was generally little difficulty in controlling it; of course I do not include those who had been previously run down by intestinal discharges; and when the case was complicated with dysentery a fatal result was much to be dreaded. In a considerable number of typhus patients dysentery had for some weeks preceded the attack; in fact the latter not uncom-

monly ran so gradually into the former, that it was difficult to fix the date of the febrile seizure.

“Complications occurred in the following order of frequency: 1st. Gastro-intestinal, indicated by tenderness of abdomen, tympanitis, diarrhœa, and dysentery. 2nd. Pulmonary affections, bronchitis, and pneumonia. 3rd. In several instances we had hemorrhage from the nose to a great extent, and this not critically, but coming on while the disease was progressing, on its subsidence leaving the sufferer debilitated, without producing any advantageous result. One unfortunate man had passed the seventeenth day; everything seemed going on well, tongue cleaning, pulse coming down, and in fact I considered him convalescent, when suddenly, without any appreciable cause, violent epistaxis came on, which obstinately resisted every means used, both general and topical. I plugged the posterior nares before the bleeding ceased; for a few hours he seemed to rally; again hemorrhage recurred, this time from the mouth; he began to pass bloody stools, though a careful examination satisfied me that no blood escaped from the nose to the stomach; and he died on the twenty-first day, apparently from pure exhaustion. He had previously lived for more than two months in the utmost penury, with a pride not uncommon among the lower classes here, refusing relief, and, as I was informed, for a considerable period not tasting food but once in the day, and that too of the worst description (stirabout made from damaged Indian corn-meal). Here a *post mortem* examination would have been of extreme interest; but I found it, as in most other instances, quite impossible to overcome the repugnance of the relatives to such.

Males were more susceptible of the infection than females, and those between 17 and 34 were oftener attacked than either the very young or the aged. This may have arisen from two causes:—1st. Individuals in the middle period of life are, from their habits and pursuits, brought more in contact with contagion, are more exposed to the exciting causes of disease,

e. g. cold, wet, intemperance, and so forth. 2nd. In a community, the inhabitants of this age are more numerous than those of any other interval of similar length.

“Relapses were common; they frequently might be traced to disobedience of the rules laid down by the physician, or to irregularities in regimen; to eating largely of some indigestible food, to some exposure to damp or cold air, or to drinking a quantity of spirits, perhaps brought to the patient by some kind but injudicious friend, and such like; but under the most promising and favourable circumstances they occurred, generally, however, in a mild form, and, unless accompanied by diarrhœa or dysentery, the type was much less formidable than in the primary cases. I am not aware that petechiæ were met with in the relapses when they had not been thrown out in the primary attack. I saw some eight or nine patients who *relapsed three or four times*. As a general rule, every subsequent attack was slighter than the preceding.

“Crisis was of such rare occurrence that we did not look for it. The patient went on in the usual course for from twelve to eighteen or nineteen days; then, perhaps, without any appreciable change, fell into a quiet sleep; the stertorous breathing, injection of the conjunctivæ, low, muttering delirium (which we often met with), and other bad symptoms, subsided, and, at the following visit, we found the patient much improved, and with a falling pulse, maculæ or petechiæ fading, a tongue either entirely moist, or cleaning at the tip and edges; answering questions somewhat collectedly; and from this date the case might be considered convalescent. Convalescence was invariably slow. It is difficult, if not impossible, among a scattered and pauper population, to note the duration of recovery; but from my recollection, I think it was much more lengthened than in the ordinary endemic typhus of this country.

“It will be remembered that the late epidemic was characterized by an extraordinary degree of prostration and debility. The words of Dr. Stokes may be aptly applied to it: ‘It was

marked by all the signs of putridity. Dark-coloured and abundant petechiæ, soreness of the mouth, fætor of the surface, extreme prostration and stupor, were the prominent features of the disease; and in many cases bronchial and gastro-enteric irritation existed to a great degree.' Stimulants were thus, in a vast number of cases, undoubtedly indicated; and the young practitioner naturally looked for some rational guide as to the proper period for commencing their exhibition. Bearing in mind, then, the observations of the author just quoted, my attention was, at an early period, directed to the state of the heart. In a great number of patients I carefully examined the cardiac region, and the result of my experience may be stated in a few words. The action of this organ, sometimes as early as the fourth or fifth day, became weakened, and its impulse much less strong than natural, while the sounds diminished in intensity, though I cannot say that I ever noticed the total absence of either. Sometimes, when the first sound had almost disappeared, while the patient was lying on his back, by a slight change of position it was heard with much more distinctness. The same remark will apply to the impulse. I never heard the first sound predominate, and I am forced to say that I think I had sufficient grounds for believing that the pulse afforded a very constant and accurate index of the state of the heart; when the former was weak and thready, the latter beat with less than normal force, and its sounds were proportionately diminished. However, with the indications of weakened or oppressed circulation, I did not hesitate to give wine, punch, or whatever stimulants were available; and it was observed that, when they agreed, the pulse came down in frequency while it increased in strength, the tongue grew moist, and sleep often followed.

“ From what I have already said it will be gathered that stimulants were freely used, and that, too, at an early period. It was found necessary to continue their use much longer than is usually done, convalescence being tedious, and the subsequent debility very great. I very frequently ordered

carbonate of ammonia, strong camphor mixture, with or without tincture of opium, and this combination was very useful, particularly when the supply of wine, &c., was scanty, or not to be procured. It answered nearly every purpose for which they were employed, was cheap, and, being small in quantity, easily administered ; and besides, being “physic,” there was less inducement for the friends or nurses to help themselves. In but four or five cases was blood-letting resorted to, and this only locally, when there was determination to the head or chest. In bronchitis dry cupping answered well, at the same time that it did not depress the patient. Small doses of hydrargyrum cum cretâ, with or without Dover’s or James’ Powders, were not unfrequently given for a day or two at the commencement of the attack, but afterwards the antimonial was not repeated, except in a very few *pulmonary* complications. In general if diarrhœa or chest affection supervened, we returned to the mercurial and Dover’s Powder. Change of diet had an astonishing influence on gastric attacks ; in fact, a proper and judicious regimen seemed to stop diarrhœa and even dysentery, when medicine had quite lost its effect. This was evident on the removal of the sufferers to the hospitals. Good food could not be given at their own houses, but no sooner had they entered the hospital, and were put upon wholesome farinaceous and albuminous diet, than the bowel complaints ceased, and it was even occasionally necessary to administer a mild aperient. As far as I can form an opinion the proportionate mortality was somewhat greater in the hospitals, where the patients had every advantage of nursing and attendance, food, and clothing, than in the miserable habitations of the pauper, where not only the comforts, but the absolute necessities of life, almost of existence, were unknown.”

Dr. Hunter has furnished us with the following observations from the district of Bryansford and Castlewellan, county of Down, in addition to those of his already quoted in the previous details :

“It is right to premise that the poor of our district, though

suffering, in common with those of every other part of the island, from scarcity during the year 1847, were providentially exempted from that extreme misery endured in other localities; and though many were sadly *under-fed*, and suffered in other respects, I do not believe that actual starvation occurred in any one instance, so as to induce the 'famine fever,' described elsewhere. Dropsical effusions, especially anasarca, dysentery, and, in summer, scurvy, were the common results of insufficient and unwholesome food. But there was no actual starvation. Many causes contributed to this merciful exemption, especially the active, industrious, and prudent habits of the labouring classes in general, which had enabled them to provide some small resources upon which to fall back; and the prompt liberality of the landlords and more wealthy classes, who at once came forward with liberal subscriptions, and formed relief committees, to provide for the destitute. These relief committees were admirably managed, and of the utmost use.

"We had not more than the ordinary average of fever cases till the month of April, 1847, when the disease spread rapidly, increased during the summer months till September, in which the greatest number of cases occurred, and gradually declined till December, when they had again sank to their usual average. The disease, as is usual in such cases, was more violent and fatal at the outset of the epidemic; and though the cases multiplied as the season advanced, the mortality did not increase in proportion; on the contrary, a very large amount of those attacked recovered. The great majority were of the poorer classes; and in these cases, when a family was once invaded, few individuals escaped the disease; and I cannot doubt that, in many instances, it was propagated by contagion. When it did attack the more opulent and upper classes, the symptoms were far more formidable, and the danger to life greater. Indeed the recoveries of the poor in their own cottages, destitute of almost every comfort, were astonishing. We had no fever hospital within ten or twelve

miles, and the difficulty and danger of removal were great; so that, though a good many cases were sent to these institutions, by far the greater number were treated at home, and the result was very satisfactory, the mortality being remarkably low.

“ Among the poor dysentery was almost universal, and in many instances most obstinate, often causing ulceration of the intestines, hemorrhage, and fatal results; these cases, especially in persons living as servants or operatives in the adjoining large towns, and returning to their native places while labouring under fever, were a class very difficult to bring through.

“ Among the upper classes dysentery was a rare complication; in these, cerebral congestion, and head symptoms, with great disturbance of the nervous system, were by far the most common and dangerous.

“ The invasion of the fever was generally slow and treacherous. Often for the first few days the pulse remained nearly natural, and the tongue clean; yet towards the seventh or eighth day the disease would assume a most formidable type, and run through the remainder of its course severely.

“ Sometimes convalescence took place on the eighth or ninth day; but in a great majority of these cases relapses occurred, even though every precaution had been observed to guard against them. These relapses were seldom fatal, but induced great debility, and the recovery was very slow. The disease, in ordinary circumstances, generally ran on till the fifteenth or twenty-first day, and in a few cases even much longer. Decided crisis was not common; as the commencement of the disease was often insidious, so the mitigation of the symptoms was often so gradual, and liable to so much fluctuation, that decided crisis was rather the exception than the rule. Petechiæ were not common, but occurred in many cases; bed-sores also were occasionally met with, and were very obstinate, especially in neglected cases.

“ As to treatment.—The disease was of a type which bore all lowering measures badly, and it was generally necessary to

allow moderate support from the first, and often to begin the use of wine and stimulants early; and these were usually well borne. Lecches were occasionally necessary to the head, abdomen, &c.; but general depletion was practised only in two cases of acute inflammatory complication, and with great caution. Both these cases recovered. Cold to the shaven head, gentle alterative aperients, diaphoretics, counter-irritation by blisters, sinapisms, turpentine, &c., and supporting the strength carefully, was the general practice. In cases of watchfulness and wild delirium the tartar emetic and opium, as recommended by Dr. Graves, was most useful; and when dysentery prevailed, mercury with chalk, with Dover's Powder, and chalk mixture with opium and astringents, and especially the acetate of lead, were chiefly relied on. In a word, I endeavoured to meet the symptoms as they arose, and did not rely on any routine mode of treatment, or adopt any remedy as specific. Mercury, cautiously employed, was most valuable, but was not often pushed so as to induce ptyalism.

“The population of the district is about 12,000 or 14,000, and the number of cases of fever under my care, among all classes, during the year 1847, was 681. Many other cases were, of course, in the hands of other practitioners.”

Dr. Starkey, of Newry, writes:—

“During the prevalence of this disease we had many convincing proofs of its contagious character; as one I may mention the following:—In October last I attended several children affected with fever, each of a different family, and residing in different parts of Newry. As all presented the same symptoms, I was led to make a particular inquiry as to the origin of the disease; and discovered that these children attended a school in which one of the assistants had fever of a similar character. This fever, so contracted, was communicated in each case, without exception, to the parents.

“The epidemic chiefly attacked those who suffered from want of food; but, as usual, the comfortable classes did not es-

cape, the proportionate mortality among the latter being much greater than among the poor. I knew many families living in wretched poverty on the mountains near the town, who were attacked with fever, and who, without any medical attendance, and but little attendance of any kind, passed through the fever without a single death; whereas among the comfortable and intelligent the deaths were numerous indeed. As an explanation of this fact, I consider that it was owing to the greater frequency of local complications in the fever of the latter. In nearly all the fatal cases I saw in this class of persons the head was the part principally engaged. In November and December the most frequent local complication was affection of the lungs, situated in the under and posterior parts; in persons so affected we had dulness on percussion, and soft respiratory râles behind, with cough and quick breathing.

“ This fever appeared to me to differ from former epidemics, in the very great similarity of the symptoms of all those attacked; in the early appearance, say the second or third day, of a maculated eruption resembling measles; and in the frequent occurrence of epistaxis at the commencement of the disease. The common duration of the fever was fifteen or sixteen days; seldom was there any distinct crisis; in some, epistaxis acted as such, in others perspiration and sleep were the usual critical phenomena.

“ From my experience of this epidemic I felt convinced of the great reliance which should be placed on the efforts of nature; as in the great majority of cases, particularly among the poor, and when there was no local complication, very little treatment was required, an occasional purgative, and the timely administration of proper nourishment, being alone sufficient to bring such cases to a happy termination. Emetics given at a very early period, say during the first twenty-four hours, appeared to me in some instances to cut short the disease, or, if they did not, the fever was afterwards more easily treated. General bleeding was practised in several cases at the commencement,

and, according to my experience, almost always with bad results. I was called to see a Catholic clergyman in October, who, in the commencement of the fever, had himself largely bled; the consequence was, typhoid symptoms soon appeared, and he died in a few days. Local bleeding, however, in cases of complication, was useful, and followed by the best effects.

“ With respect to mercury, I do not recollect a single person benefited by its use. A gentleman in Newry, when he discovered he was attacked with fever, took large quantities of calomel, which affected the system; the fever nevertheless proceeded on its course, and was much complicated, being one of the most severe cases here. As want of sleep was generally complained of, an opiate of acetate of morphia, combined occasionally with antimonial wine, was given towards the termination of the disease, and had often the most happy effect in allaying that restlessness and irritability so commonly observed in the disease at that period. Strong stimulants were seldom given, but wine and nourishing drinks were early employed to support the system. In some cases the sounds of the heart became very obscure; in these, wine in large quantity, and beef-tea, were our chief reliance, and seldom disappointed our hopes.”

We insert the following extract from the report of Dr. Croker of Hillsborough:—

“ The mortality here was small, being about three per cent. It appeared to me that those of the better class that were attacked with fever had it more virulently than the lower grade; but the proportion was very much less. The fever remained longer, and the cases were much more liable to relapse, in those who had been previously in want of food. Typhoid symptoms did not set in early; dysentery more frequently preceded the fever; the cases of scurvy and purpura were few. I cannot say from my own observation if there had been any epidemic in this district amongst cattle at the time, but should rather think not. The cases of fever were very liable to relapse, and were fre-

quently complicated with gastritis. The disease generally ran from eleven to fourteen days. Purpuric spots were not unfrequent in the latter stages; the relapsed cases generally set in about the third or fourth day after convalescence; petechiæ often appeared in the relapsed cases, which were not observed in the primary form; crisis was common, being generally preceded by soft tongue; epistaxis was not common,—in any cases where it appeared, it was in the latter stages; extreme tenderness over the spleen was frequently observed; bed-sores were not usually met. The frequent sequela of fever was anasarca. The treatment found most serviceable was the usual diaphoretic mixture, with small doses of hydrargyrum cum cretâ, together with generous diet, and wine when at all admissible. The mortality amongst those attended in their own houses was much greater than those who went into hospital. No general depletion was used, I may say, in any case and when the abstraction of blood was at all necessary it was by leeches; blisters were found very efficacious. Mercury and opium were used in many cases; the former was seldom pressed for any length during the fever, but often found of much benefit, combined with diuretics, in anasarca following as a sequela, &c.”

Dr. Young's report from Monaghan is as follows:—

“ My patients were of the respectable classes, varying in grade from the professional gentleman to the independent (if there is any such now) farmer; consequently I can give you no account whatever of *post mortem* appearances;—for here we have not yet arrived at such a pitch of refinement.

“ According to my experience, no rank of life (remember the ranks I speak of do not represent the extremes of society) appeared to influence the fever in its mode of attack, its career, or the results. Males were more frequently the objects of its assault; and the middle time of life, in both sexes, was most obnoxious to the attack. There was no such thing as well marked crisis in any one case I saw; the longer the disease continued, the more confidently I looked forward

for a favourable result. I do not just now recollect any attack having proved fatal if prolonged beyond the sixteenth day, but I have watched some with very painful anxiety up to nearly the end of the third week, and have been by no means sure of the recovery of others until the fourth week had nearly terminated. Every case of sudden change within sixteen days proved fatal; there was no sudden change beyond that period that I recollect distinctly, consequently I think I can fairly report a recovery in all such, although my anxiety was considerably prolonged beyond this period in almost every case that came within my observation. During the career of fever head symptoms were the most prevalent; they varied from the slightest possible disturbance of the mental powers to controllable delirium. Some went through the entire fever, of nearly four weeks' continuance, without having presented to the ordinary attendants the slightest deficiency of intellect, or aberration of the senses; yet, to the surprise of those about them, on their recovery, confirmed my opinion of the whole period of their illness being a perfect blank in their memory. I do not know of any one case where blood had been abstracted, even by so few as six leeches, that recovery was the result, no matter how carefully the case had been attended to afterwards. Whenever I found blood had been taken previous to my visit, I looked for the result with the most serious apprehension, and, I regret to say, in no one single instance did my fears prove groundless.

“The spotting was universal,—it was present in every case; it generally made its appearance on the evening of the third or fourth day, reckoning from the period of the last chill which ushered in the attack, and was of every shade as to intensity, from trifling mottling to the actual subcuticular effusions of blood in patches varying from the size of a spangle to that of a silver four-pence. One case I recollect in which the brain was very early engaged, and the spotting universal, and very dark-coloured; the skin plainly exhibited the petechiæ to

the end of the third week after the fever had quite subsided, and during the convalescing, which I carefully watched.

“ I had not any case of relapse amongst those I treated; but I recollect one case which was under my care subsequently, owing, I believe, to the patient having made a journey ere her strength was established sufficiently. She got well.

“ Bed-sores were not frequent; they were the result of debility; showing evidence of their approach so early as the fifth day, and running into broad and deep sloughs in spite of all care bestowed upon them. I do not remember that any of the fatal cases of fever were affected by them.

“ The treatment, of course, varied very much. Without giving you special cases, and the daily prescriptions, &c., I must prove deficient in my report of this; suffice to say, in every instance I avoided bleeding, either generally or locally. Where an internal organ required relief, I trusted to very frequently-repeated small blisters; and where I feared to employ even these, I found much benefit in employing a pomatum containing croton oil, which, on being rubbed into the head, did all I required, without inducing debility. The treatment by tartar emetic and opium, according to the mode recommended by Dr. Graves, I found now and then of the greatest service. One case now strikes my remembrance as being somewhat remarkable, that of a young clergyman who was seized with fever after exposure to fatigue and wet. I thought his was a case for the tartar emetic and opium treatment, and put him under it accordingly. I remember it was pushed by me to the extent of twelve grains in the twenty-four hours, and continued for twelve days, the dose varying from four to twelve grains *per diem*. On two occasions when I suddenly reduced it, fearing gastric symptoms might be induced by the quantity I was giving, severe cerebral excitement was again manifested, so that I was compelled to resume it. During all this time, whilst it was controlling the delirium, the only effect it appeared to produce to the ordinary attendants was increase

of appetite, and this increased in a direct ratio with the quantity of medicine used. The recovery in this case was perfect, after a fever of nearly four weeks' duration. Wine, camphor, mercury, opium, tartar emetic, and nourishment, were given in the different cases as they seemed to me to require it; and, in the end, I am thankful to say, I did not find the epidemic of 1846 and 1847 a very fatal one in my practice."

CONNAUGHT.

First Class of Queries.—The History and Antecedents of the Epidemic.

Sligo.—The fever was prevalent in this county. Previously to its outbreak the health of the district was very good. The epidemic commenced in the latter part of 1846. "Those whose health was below par were more liable to be attacked"(a). No class in society appears to have been exempt from the disease. Scurvy or purpura does not seem to have preceded its outbreak. The want of food appears to have influenced the disease amongst the people. The young were chiefly attacked, but it is not noticed whether the disease was more prevalent among males than females.

Leitrim.—The epidemic was very prevalent in this county. Dr. Munns reports that he had at one period in 1846 upwards of 200 cases at the same time in the workhouse of Carrick-on-Shannon. The sanitary state of the district was good previously to its outbreak, which occurred about June, 1846, in the town of Carrick-on-Shannon; while in the remote northern hilly districts of the county it did not appear until December, 1847(b). Those that were attacked were for the most part previously reduced from want of food, and the lower classes in society were the first affected. Dr. Nash mentions that the fever was preceded by aphthous ulcers upon the tongue and gums. A disease prevailed among cattle previously to the

(a) Dr. Lynn, Sligo.

(b) Dr. Nash, Drumkeerin.

epidemic of fever. In Dr. Munns practice the greater number attacked were between the ages of six and twelve years; while Dr. Nash states that no age escaped, but that more elderly persons were attacked than usual. Females were more liable to the disease than males. The proportion of cases to the population of the district was very high.

Roscommon.—The general health of the district was not good previous to the breaking out of the epidemic, “bowel complaints having prevailed very much; but in some parts the health was in general good”(a). The disease, which commenced in the end of 1846 or beginning of 1847, was very prevalent. Those attacked were, for the most part, previously in bad health. The lower classes in society were chiefly attacked, but no class escaped. Dr. Cuppaidge reports that he has frequently seen the disease set in after recovery from the effects of starvation; and change of diet among the people appears to have materially influenced it. It was not preceded by scurvy or purpura. In the neighbourhood of Castlerea(b) and Athlone(c) there was no disease observed as being prevalent among cattle; but at Boyle an epizootic disease was both prevalent and fatal at the same time as, and previously to the breaking out of the epidemic(a). All ages were liable to be attacked, but the majority were from twenty-five to thirty-five years of age. There appears to have been but little difference in the liability of the two sexes, but Dr. O’Connell thinks that the males suffered more.

For the county of *Mayo* we refer our readers to the reports of Drs. Pemberton and Dillon, in the summary of this province.

Galway.—The epidemic of fever was very prevalent in this county. In many parts of it the health of the district was tolerably good previously, but in the neighbourhood of Ahascragh “dysentery and diarrhœa, caused by scarcity of wholesome food, prevailed much”(d). The disease commenced in

(a) Dr. O’Farrell, Boyle.

(b) Dr. Cuppaidge, Castlerea.

(c) Dr. O’Connell, Athlone.

(d) Dr. Kearns.

the latter locality about April, 1846, and in Clifden(*a*) in the autumn of that year, the district having been previously healthy, but elsewhere in the county, as at Kinvarra(*b*) and Oughterard(*c*), it did not begin until the spring of 1847. The health of the population was generally bad, the majority being worn down by want; and change of diet influenced much the disease. The lower classes, especially the destitute, were most affected, but no rank in life escaped. The disease very frequently set in after recovery from the effects of starvation, and Dr. Davis remarks, that relapses were very common in such cases. Neither purpura nor scurvy appear to have preceded the fever generally, but Dr. Kearns observes that purpura frequently accompanied the disease; and he also states that pneumonia prevailed among cattle in the neighbourhood of Ahascragh, both at the same time and previously; but this latter was not observed by either Dr. Hynes or Dr. Davis in their parts of the county. Young persons from 15 to 35 were chiefly attacked with fever, and females more frequently than males. The proportion of cases to the population of the various districts was very great,—ten per cent. according to Dr. Hynes.

For further information on this class of queries, see the reports of Drs. Lynch, Turner, Fry, Ormesby, and French.

Second Class of Queries.—The Character and Symptoms of the Disease.

Sligo.—Decided evidence exists in this county as to the disease being contagious. The fever was peculiarly characterized by the frequency with which purpuric spots appeared. Crisis was common; the most usual critical phenomena were those so generally observed, diaphoresis and urinary deposit.

Leitrim.—Drs. Nash and Munns are of opinion that the disease was manifestly contagious. In the higher classes of society typhoid symptoms occurred earlier and were more

(*a*) Dr. Suffield.

(*b*) Dr. Hynes.

(*c*) Dr. Davis.

marked(*a*), and head symptoms prevailed principally amongst them(*b*). When the disease followed starvation, and especially dysentery, the effect of starvation, it was of the typhoid character, "the typhoid symptoms following the starvation state about the eighth day"(*a*). The recent fever differed from former epidemics, according to Dr. Munns, in the more anomalous symptoms which occurred ; while Dr. Nash is of opinion that it was chiefly remarkable from the absence of any marked crisis. Purpuric spots were very common. Crisis was in general very obscure, and not common ; when it appeared the critical phenomena were diaphoresis, increased secretion of urine, and rarely epistaxis.

Roscommon.—In this county, also, the evidence is in favour of the contagious character of the fever. "All the officers," writes Dr. O'Farrell, "of the two fever hospitals of which I had charge, with the exception of myself and another, were attacked with the disease." This physician also states that head and nervous symptoms preponderated in the higher classes and in persons in comfortable circumstances ; but Drs. Cuppaidge and O'Connell agree that in their practice the type of the fever was alike in all classes. The epidemic was characterized especially by the marked debility which was present throughout. No purpuric spots were observed. Dr. Cuppaidge frequently remarked the occurrence of crisis, epistaxis and diarrhoea being the usual critical phenomena. Dr. O'Farrell states that it was very uncommon, except in the five or seven-day fever, when it occurred with a violent rigor ending in profuse perspiration ; while Dr. O'Connell says that he never saw what is properly called crisis occur.

Galway.—The evidence as to the contagion of the fever in this county was very decided. "Amongst the better classes the fever commenced with well-marked symptoms of an inflammatory, sometimes terminating in those of a typhoid character, ac-

(*a*) Dr. Nash, Drumkeerin.

(*b*) Dr. Munns.

accompanied by petechiæ, &c. But among the poorer classes the whole character of the disease was asthenic, whether simple, continued, or typhoid”(a). “In the upper classes the tendency to sinking was much more decided. In those cases which followed starvation the type was much lower, with a great tendency to putrefaction”(b); the typhoid symptoms setting in at an early period, seldom later than from the seventh to the ninth day. Dr. Hynes states that his experience does not enable him to point out any difference between the recent epidemic and those of former years, but that he has observed a decided difference in the duration, symptoms, and liability to relapse in this epidemic in the years 1847 and 1848; the cases in the former year were of shorter duration, and more liable to relapse. Dr. Kearns is of opinion that the recent epidemic was characterized by its low character, and the head being much less engaged. Purpuric spots were very common, “in ten cases out of twelve at least”(b). Diaphoresis was the most usual critical phenomenon. Diarrhœa and epistaxis occurred more rarely.

In the Connemara district Dr. Suffield says:

“There was abundant evidence that the disease was highly contagious. At the commencement of the epidemic those attacked were at the time generally in good health; but as the disease advanced almost all the cases that presented themselves were in those who had been and were suffering from privation and want. The lower orders were chiefly attacked, but the higher class suffered materially. The only difference I could observe was, that in the former class the fever ran more rapidly to a fatal termination than in the latter. From the eighth to the tenth day well-marked typhoid symptoms set in. Dysentery, with but few exceptions, preceded, accompanied, or followed the fever. I did not observe one case in which scurvy or purpura appeared either before or during the disorder.

(a) Dr. Hynes.

(b) Dr. Davis.

There was no disease in cattle at the same time or previous to the epidemic. I have seldom witnessed a death from a relapse. Purpuric spots were not common. Petechiæ occasionally appeared in relapses when they did not occur in the primary fever."

Third Class of Queries.—Complications.

Sligo.—In the lower classes dysentery preceded, accompanied, and followed the fever. Local complications in any form were rare. Relapses occurred frequently, but no difference is noticed between the primary and relapsed cases, except that maculæ appeared in the relapse, when they did not occur in the primary fever. Epistaxis was common in the early stages. Dr. Lynn reports that bed-sores were not so frequent as in other epidemics.

Leitrim.—Dysentery frequently preceded, accompanied, and followed the fever; Dr. Nash states that it was most common as a sequela, causing death. In this physician's practice chest affections were the most frequent complication, but Dr. Munns found head complications more common, although pectoral and abdominal were also met with by him. Relapses were very frequent, in some cases recurring more than once. Petechiæ did not appear in the primary fever. Epistaxis was not frequent, occurring principally among young persons, and early in the disease. "Bed-sores were very frequent, and inclined to slough"(a).

Roscommon.—Dysentery was present before and after the fever, and sometimes as a complication; Dr. Cuppaidge found it most frequently to precede the disease; Dr. O'Farrell writes "that it invariably followed fever occurring in persons who had previously suffered from starvation, and was almost invariably fatal." The most frequent local complications were those of the chest and bowels. Relapses occurred very frequently, the chief difference noted between the primary and relapsed cases being that the latter were of a worse type. Pe-

(a) Dr. Nash.

techiæ often appeared in relapse, but did not occur in the primary fever. Dr. O'Farrell reports that epistaxis was very frequent and severe, in two cases requiring plugging the posterior nares; it occurred early in the disease. Bed-sores were rare.

Galway.—In this county dysentery most frequently followed the fever, but it also preceded and accompanied it. Abdominal complications were the most general, and next to them pectoral. Relapses were very frequent, sometimes recurring two or three times, the relapsed cases presenting generally more typhoid symptoms, “and were almost generally attended with rheumatic pains of the joints”(a). In Kinvarra petechiæ frequently appeared in relapse, while they did not occur in the primary fever; but such does not seem to have been the case elsewhere. Epistaxis does not appear to have been very frequent; Dr. Davis mentions that he had two cases, in both of which it appeared in the relapse. Enlargement of the spleen was not observed. Bed-sores were very infrequent.

Fourth Class of Queries,—including the Mortality and morbid Appearances.

Sligo.—Mortality was greater in the upper classes and in males. “There was nothing remarkable noticed in the *post mortem* appearances, except when dysentery preceded or followed the fever.”(b) We have been unable to obtain any information as to the proportion of mortality among those attended at their own houses or in hospitals, or between the inhabitants of densely populated places and the thinly populated rural districts.

Leitrim.—The fever was most fatal to persons in the higher classes, and especially among persons advanced in life. With regard to morbid appearances, examinations after death were not frequently made; Dr. Nash states that the only remarkable appearances he met with were “effusion into the ventri-

(a) Dr. Kearns, Ahascragh.

(b) Dr. Lynn.

cles, and inflammation of the membranes of the spine." There was a greater per centage of mortality among those attended at their own houses than in hospitals.

Roscommon.—The mortality was much greater among the higher classes than the poor, "amounting to about forty per cent. in the former, and not more than about four per cent. in the latter"(a). No *post mortem* examinations appear to have been made. The mortality was much greater among those attended at their own houses than in hospitals; "it was as marked in the thinly populated rural districts as in densely inhabited places"(b).

Galway.—Most of the reports from this county agree that the mortality was greater among the most destitute; but Dr. Kearns states that it amounted, "in the poorer classes, generally to from six to eight per cent. ; in the middle or more comfortable classes it was much less; but in the upper classes it was much higher." No *post mortem* examinations were made. The mortality was much greater among those attended at their own houses than in hospitals. It was also much greater in towns and densely populated districts than in thinly inhabited country places; but Dr. Davis mentions that in one large mountain district in his neighbourhood, previously to the opening of the temporary fever hospital, the mortality was greater than he had elsewhere witnessed.

Fifth, Sixth, and Seventh Classes of Queries,—relating to the Duration of the Disease, Modifications, and Sequelæ.

Sligo.—The duration of the disease varied much at different periods of the epidemic; those primary cases which were subsequently followed by relapse, were always of short duration. Among the remarkable modifications of the symptoms, in individuals of the same family, placed under similar circumstances, Dr. Lynn makes the singular remark, that "the head

(a) Dr. O'Farrell.

(b) Dr. O'Connell, Athlone.

of the house generally died, but the other members never." Much diversity of symptoms was noticed amongst members of the same family, who had contracted fever from the same cause. The most usual sequela of the disease was dysentery.

Leitrim.—The usual duration of the fever was from fourteen to twenty-one days, and the convalescence was very prolonged; where relapse occurred the fever was in general more tedious. No remarkable modification is noticed as having occurred in members of the same family. Dysentery was the most usual sequela.

Roscommon.—The usual duration of the disease was from eleven days to three weeks, and the length of the convalescence generally a fortnight, sometimes prolonged to a month. "Cases of fever, with well-marked crisis on the fifth or seventh day, without a single exception, relapsed; those cases of fever were generally non-petechial"(a). Dysentery, anasarca, and swelling of the lower extremities, were the most usual sequelæ.

Galway.—The usual duration of the disease was about a fortnight, in some few cases it lasted for twenty-one days: "If the crisis was prolonged beyond fifteen days the case generally ended fatally"(b). Convalescence was in nearly every instance tedious and protracted; the milder and shorter the primary attack was, the more liable was the patient to relapse. The only modification of symptoms noticed, as occurring in members of the same family, was, that the disease was milder in the young than in the old. Dysentery, dropsical effusions, and rheumatic pains, and phthisis (in some few cases), were the most frequent sequelæ.

Eighth Class of Queries,—referring to the Treatment.

Sligo.—As elsewhere in our reports, a stimulating and supporting plan of treatment was here also found most serviceable. Wine and other stimulants were used freely, while bleeding in any form was seldom employed. In cases of great wakefulness

(a) Dr. O'Farrell.

(b) Dr. Suffield, Clifden.

opium was found very useful; to use the words of Dr. Lynn, "it sometimes turned the scale."

Leitrim.—"On the first invasion," writes Dr. Munns of Carrick-on-Shannon, "I found cold affusion particularly serviceable, in fact, so much so as to cut short several cases. This was followed by an emetic, and attention paid to the various secretions. In severe complications, particularly of the head, I found leeching and counter-irritation very useful." In other districts of this county an expectant plan of treatment seems to have been chiefly employed, the strength having been judiciously supported by nutritious diet. Stimulants seem generally to have been freely employed, with good effect; yet blood-letting, both local and general, was also had recourse to, especially by Dr. Munns, who states that he employed it in the first stages, especially in the young and plethoric, when the eyes were much suffused and the countenance flushed. Bleeding by leeches was chiefly resorted to in local complications. Mercury was only had recourse to as an alternative. "Opium, combined with tartar emetic, as recommended by Dr. Graves, was used with excellent results in cases attended with delirium and restlessness"(a).

Roscommon.—A stimulant plan of treatment was generally employed, and found most serviceable: "A little wine, beef tea, and carbonate of ammonia"(b). Wine was very freely employed, and, where it could not be procured, whisky-punch. Neither local nor general bleeding seem to have been resorted to, except in very few cases, and then only in the form of leeching. Mercury was very seldom used, except in cases of dysenteric complication, or as an occasional aperient. When pneumonia occurred, Dr. O'Farrell administered it with good effect. Opium was only employed in the advanced stages of the disease, either when diarrhœa or dysentery set in, or when nervous symptoms prevailed.

(a) Dr. Nash.

(b) Dr. O'Connell.

Galway.—The supporting and stimulant plan of treatment was also generally resorted to in this county. Dr. Davis used cold affusion in the commencement of sthenic cases, followed by active purgatives; but towards the end of the disease he had recourse to blisters, sinapisms, cordials, and stimulants. Stimulants were generally used, both wine and spirits. General bleeding does not seem to have been employed, except in very few instances. Local depletion was used occasionally, when any important organ was engaged. Both mercury and opium were administered in cases attended with diarrhœa or dysentery. The latter was also given with excellent effect in cases attended with great nervous excitement and want of rest. “The treatment employed consisted in the administration of mild aperients in the commencement, and the use of tonics and stimulants at an early stage of the disease. Bleeding had a decidedly injurious effect, and was seldom employed. Blisters acted beneficially. Mercury, in the form of hydrargyrum cum cretâ, was used with much benefit, as also opium. Wine was given only occasionally in hospital, its place having been supplied by good porter containing a small quantity of spirits”(a).

Summary of Reports not comprised in the foregoing Details.

We have not received any reports from Sligo; but Dr. Dillon, of Castlebar, county Mayo, writes :

“In March, 1847, our county gaol was crowded to more than double its capability; those committed being in a state of nudity, filth, and starvation. The prison hospital, calculated to hold sixteen patients, had, early in March, eight cases of low typhus. From the character of the fever, the condition of the prisoners, and the fearfully crowded state of the gaol, I clearly saw we must before long have a full visitation of bad typhus, and accordingly applied, through the proper authority, for immediate and farther hospital accommodations. The high sheriff and governor, however, took upon themselves to offer a

(a) Dr. Suffield.

different opinion, and declared there were no grounds for alarm. A few weeks, however, proved their ignorance, for by the end of April we were in a state of actual pestilence; in the hospital the unfortunate sufferers were heaped together, several buildings in the prison, from necessity, containing more or less fever cases. Before temporary sheds could be erected,—and they were got up with much expedition,—we had fully one-fifth of the inmates in bad maculated typhus. Our Roman Catholic chaplain, deputy governor, deputy matron, and a turnkey, fell victims; *every* hospital servant was attacked; and from our wretched, over-crowded state, the mortality was fearful,—fully 40 per cent. Of the contagious character of the disease I believe I may say no more. At this period, and for some months before, fever prevailed in all quarters of the country, and not a few of those committed were inmates of the fever wards a few hours after committal. Throughout the county fever was confined chiefly to the poor, and mostly to those suffering the privations of want of food, fuel, and clothing, all of whom were in anything but a state of good health.

“The duration of the fever in the gaol was from eleven to twenty-one days; the marked typhoid symptoms sometimes appearing as early as the fifth day. Female prisoners suffered in a considerably less proportion than the males; and the mortality amongst them was not one-half, during the existence of this disease in the gaol. A mild form of continued fever was present, of from five to seven days’ duration, without any cerebral disturbance; in this form relapses were frequent, deaths few; and the same has been observed to exist throughout the country, amongst the peasantry. Relapses from the typhus, with petechiæ and cerebral disturbance, did not occur in more than three instances in the gaol. Dysentery, pulmonary disease, hepatic congestion, and dropsy supervened in some cases, and insanity in one. Crisis appeared in most cases by diaphoresis, in some by increased renal secretion, and in two or three by epistaxis, the latter always occurring in young, full habits, and when local depletion had been resorted to. Early profuse

diaphoresis, unaccompanied by any mitigation of symptoms, *invariably ended fatally*, seldom later than the eleventh day, but sometimes on the fourteenth; this unfavourable symptom I have had amongst the higher class in many instances, and was never deceived in my prognosis. The late rector of Westport was one of those remarkable cases; and, within the last two months, I had another in a respectable merchant of the same town, whose fate I predicted the first day I saw him (the sixth of his illness), the medical attendant smiling at my alarm under so favourable symptoms.

“ I know not whether the fact of a mild form of continued fever, existing throughout the country during the prevalence of maculated typhus, has been made known to you, or existed in other parts of the kingdom, but here it has been very evident; so much so, that it was not uncommon to hear a member of a family saying, “ we have been *three times down* in the fever, and have all, thank God, got through it!” On inquiry, this mild form of continued fever had been the disease. In 1848 our cases of fever in the gaol have been fewer and more mild; in fact, in either number or character, by no means remarkable; but dysentery has prevailed to a great extent: and on referring to our register, I find many of the fatal cases of dysentery in 1848 had typhus in the autumn of 1847. With reference to the dysentery prevailing in this county for the last two years, or since the introduction of Indian corn-meal as the principal food of the poor, I would say it differs materially from true dysentery, or that met with in warm climates, or even in this country, and described by authors. In the first place tormina are seldom present; scybala rarely, if ever; and intestinal pain, even on hard pressure, seldom, if ever, complained of; the discharge from the bowels muco-sanguineous, and large in quantity, and this frequently with a tolerably clear tongue. It appears to me to be produced by the quality of the Indian meal, all of which, *ground in this country*, contains a large proportion of the husk or skin; that prepared

in America being closely sifted, and quite as pure as our best flour. In America intestinal irritation from Indian corn-meal or flour is unknown. Opiates are more called for, and give more decided relief, than in true dysentery; however, cases have become so aggravated as to require the use of mercury, blistering, and other remedies necessary to subdue the acute stages of true dysentery.

“I have little to say, worthy of interest, on the treatment of the typhus that has existed amongst us for the last two years, save that depletion could seldom be borne in any form; leeches occasionally to the head might be of service, but venesection, I am satisfied, was wholly inadmissible. In two or more cases, where it had been resorted to by inexperienced persons, much mischief was done. Early stimulation, with wine, &c., was, in most cases of typhus that I saw, necessary, and counter-irritation in all was had recourse to.”

Dr. Pemberton, of Ballinrobe, has afforded us the following testimony :

“In compliance with your Circular of Queries respecting the epidemic fever which visited our unhappy country during the past and present year (1848), for it is still lurking, I am sorry to say, in the country, I will endeavour to answer them as nearly as possible in the rotation in which they are put. I may state, in the first place, that it has been very prevalent in my neighbourhood, as there was not a village and scarcely a cabin in this district that escaped its desolating influence. I have often seen whole families, consisting of seven or eight individuals, lying in the fever at the same time, with perhaps a child of eight or nine years of age the anxious nurse-tender of its father, mother, and from four to six brothers and sisters,—ministering to them the cool water of the spring (having nothing else) to quench their burning thirst; the child itself scarce able to walk from starvation, or having just risen from the bed of sickness to tend those dear objects of its affections. The people were completely prostrated by the disease, which was in

very many instances protracted to an indefinite period, for the want of that nourishment and care suitable to their convalescence; or, during the progress of their recovery, having nothing else but Indian meal to satisfy the cravings of hunger, and water to quench their thirst, taking the former in too large a quantity, when relapse after relapse occurred: and months in some instances passed away before the disease left their threshold, having brought many victims along with it.

“The district was not healthy previous to the outbreak of the epidemic, as scurvy was very prevalent for some months before, evidenced by the purple hue of the gums, with ulceration along their upper thin margins, bleeding on the slightest touch, and deep and sloughing ulcers of the inside of the fauces, with intolerable fetor, which attacked both sexes indiscriminately, and the child as well as the adult, but unattended with purpuric spots, or other discoloration of skin, in all the cases I saw, except one child, about two years of age, that had purpuric spots on its face, trunk, and extremities. Dysentery also prevailed to a great extent, which I attributed to their eating the diseased potato in the first instance, and then the sudden transition to the Indian meal, which they did not know how to cook; and many of them I have seen devouring it raw, from hunger, not having tasted food for some days previous to their obtaining it. I have no doubt also but the diseased potato brought on the scurvy.

“The epidemic fever which commenced in the workhouse of this union (Ballinrobe) the latter end of February, 1847, was brought into it by a strolling mendicant from a distant locality, who sought and obtained shelter there with fever on him, and where he died in a few days. This fever spread rapidly amongst the inmates of the workhouse, who were fully prepared to receive the infection, from the filthy state of the house, yards, and sewerage, and also from the number of human beings—men, women, and children—that were huddled together in the same rooms (the probationary wards), eating, drinking,

cooking, and sleeping in the same apartment, in their clothes, without even straw to lie on, or a blanket to cover them. All the officers of the establishment were simultaneously attacked by it in its most virulent form. The physician, master, matron, Roman Catholic chaplain, and clerk, were lying in the disease at the same time; the physician, master, and clerk dying of it; I think we have evidence in this instance alone of its contagious character; not to speak of the number of medical gentlemen who have fallen victims to the disease, caught in the discharge of their onerous duties, besides Protestant and Roman Catholic clergymen, who necessarily had to come in contact with those labouring under it. I could adduce numberless instances to prove its contagious character, if necessary, but I believe the number is few who do not admit such to be the case just now.

“Of the number of respectable persons who were attacked with the fever, I have not seen one who did not state that they had been in good health previously; but amongst the poor I have no doubt that insufficient and unwholesome food were the great predisposing causes to the disease, along with their filthy and unventilated cabins, and there being no provision made before the outbreak of the fever for separating the healthy from the sick. The higher classes of society who were attacked by the fever ascribed it to their attendance in some crowded assembly, either while presiding as magistrates in petty sessions courts, sitting on relief committees, or attending as jurors in assize towns, in which places they necessarily came in contact with large assemblies of the poor, from whose bodies and clothes issued the most offensive odours. The mortality amongst the better classes of society was truly great, six or seven out of every ten attacked dying of it; while, amongst the poor who got any care at all, not more than one out of every four or five attacked was carried off by it.

“The first symptoms complained of were a chilliness and a wish to be at the fire, or a severe rigor, accompanied by pain in the head, of a dull aching character; sometimes intense pains

in the loins and lower extremities, lassitude and great prostration of strength, with furred tongue, quick pulse, and a hot skin, suffusion of the eyes, and flushed countenance. After a few days, delirium set in, with constant talking, of a low, muttering kind; but in some cases, especially in the higher ranks of society, the talking was loud and boisterous, and they would get out of bed, unless prevented. In almost every case petechiæ were present. In some you had to examine closely for them on the chest, back, or abdomen, while others were covered from head to feet, with spots as large as a four-penny piece, of a dark colour, almost verging to black, while in others they were of a bright vermilion hue. They generally appeared from the second to the fifth day in the higher circles of society, so that they were always more seriously and fatally attacked from the commencement of the disease than those of the lower classes who had suffered in any manner from want of food. Death ensued in almost every instance from cerebral symptoms.

“ I regret I had no opportunity of making any *post mortem* examinations, from the great antipathy of all classes of society to such inspections, but I witnessed, through the kindness of my friend, Dr. Beckwith (assistant-surgeon of the 49th Regiment, then quartered here), the *post mortem* of two or three soldiers who died of the disease, and in each instance found the vessels of the brain filled with dark fluid blood, the sinuses also, and a quantity of fluid blood extravasated at the base of the brain; all the other viscera healthy, except in one case (where jaundice occurred a short time before death); the liver was of a pale yellow colour throughout its entire substance. Deafness occurred in every case. Bronchitis and diarrhœa, sometimes occurred early, but most frequently at the latter stage of the disease. Retention of urine, epistaxis, hematemesis, and uterine hemorrhage occurred frequently throughout the progress of the disease, generally towards the latter stages of it, and which, if not promptly relieved or checked, carried off the patients, already debilitated by the fever. I do not think there was any great

difference in the number of males and females attacked, but of the two I would say the latter prevailed, but think more males fell victims than females.

“The duration of the disease was generally from thirteen to fifteen days; sometimes it was prolonged to eighteen and twenty-one days, at the outbreak of the epidemic; but in that form of fever properly called the relapse fever, which did not occur until towards the latter part of the year, crisis came on, by profuse perspiration, from the seventh to the ninth day, lasting two and three days. However, in the true maculated fever, there was very seldom what might be called crisis at all; the pulse fell, the skin became more soft and pliant, with slight tendency to moisture; a copious secretion of pale urine, and tendency to sleep, were sure forerunners of amendment. Where the patient was completely prostrated by the disease, and covered with petechiæ of a dark colour, the sounds of the heart were very feeble, with an intermittent pulse; indeed, in one case, I recollect, the pulse intermitted at every third stroke, and continued so for several days (notwithstanding the free exhibition of wine and ammonia), until towards the termination of the fever, when the intermission became less frequent, and gradually lessened, until convalescence was fully established, which, in every case, was very slow.

“In the relapse fever which occurred in the autumn and winter months of last year, the patients were attacked with rheumatic pains in the back and joints, chiefly the ankle-joints, of an intense character, causing them to cry out whenever they had occasion to stir in bed; and I have lately seen a man (who had this form of fever last year) with paralysis of his left arm, and was slowly getting the use of his right, from a similar affection; he positively states he was only five days ill. Sickness of stomach and vomiting were also attendants on this sort of fever, nothing resting on their stomachs but water, effervescing draughts, or small quantities of port wine. In one case of it I had under my care, the stomach and bowels alter-

nated, in a most extraordinary manner, with each other, after the subsidence of the fever. A female of very delicate constitution was attacked with mild fever, which lasted a fortnight; during convalescence diarrhœa set in, which continued for a week or ten days. On its ceasing, vomiting began, her stomach rejecting everything except small quantities of port wine. When the stomach became settled, diarrhœa again attacked her; when it was stopped, her stomach again rejected everything; and so on, this alternation continued for months, until she was reduced to the merest skeleton. Suddenly both ceased altogether; she got finally well, and continues so. The treatment of this form of fever was very simple, consisting of diaphoretics, laxatives, and, when there was any tendency to insomnolency, opiates; when rheumatism occurred, liniments to the affected parts, with quina and colchicum, were employed.

“ In the severer forms of fever (the true maculated typhus), where there was great cerebral excitement, with delirium, shaving the head, blisters to the scalp and nape of the neck, dressed with mercurial and tartar emetic ointment, thus establishing a good discharge from the blistered surfaces, the internal administration of mercury, and even the mercurial ointment, rubbed in so as to bring the constitution under its influence, were employed. This latter was very rarely the case, indeed; but, when the symptoms were about to yield, the gums have sometimes become swelled, and a mercurial fetor was perceptible on the breath; pyalism has occurred, but not until convalescence had taken place, and then never profusely. I have no doubt but that I have saved many persons by this treatment, who otherwise must have perished; but once the mercury laid hold on the constitution the symptoms gave way, and recovery was certain. I have not used blood-letting, either locally or generally, in my practice; except in one case where I applied four leeches to the epigastrium. In that instance, where there was great tenderness and vomiting, their application induced so much weakness, although little blood was lost, that it de-

tered me from trying it again; and those cases which were submitted to either general or local bleeding, previous to my seeing them, invariably terminated fatally. I only knew of one case to recover, so great and fatal was the prostration that ensued after the loss of even a few ounces of blood(*a*). Stimulants were used internally and externally; and I have derived the most signal and unhopèd-for benefit from the use of tartar emetic and opium, as recommended by Dr. Graves, in the latter stages of the disease. The same good result has been generally experienced by the medical men in my locality, who have tried its effects.

“I would say the towns exhibited a greater amount of mortality than the thinly populated districts; and there was a greater per centage of deaths among those attended in their own houses than in hospital, from the want of cleanliness, free ventilation, proper nourishment, and strict attention in administering the remedies ordered.”

Dr. Alexander Fry, who treated the fever in two of the islands on the west coast of Galway, has furnished us with a voluminous report, from which we make the following extracts:

“Early in the month of August, 1848, I received an appointment, as medical officer under the Central Board of Health, to take charge of the district of Innis Boffin(*b*) and Innis Sark, where diarrhœa, dysentery, and fever prevailed at the time, and had existed for some weeks previously.

“These islands are the two most remote off the western

(*a*) [A remarkable instance of this occurred in the town of Ballinrobe. The late Dr. Hamilton was a noted Broussaist; he bled himself largely immediately on taking the fever. Finding himself getting worse about the sixth day, he sent for a neighbouring practitioner to bleed him again. On his refusing, he procured a “bleeder” who complied with his request. The unfortunate gentleman died before the following day.—ED.]

(*b*) [Boffin Island belongs to the county Mayo, but as it is opposite the Galway shore, and should, geographically speaking, be included in the same report with Sark or Shark Island, it is here given along with the Galway return.—ED.]

coast of Ireland, and are separated from the mainland of Galway by the bays of Claggan and Ballinakil, a distance of about eight or ten miles. Their situation is most attractive, and the scenery around is grand and picturesque.

“ These distant isles of the west are, for the most part, uncultivated, being composed of extensive rocky hills, with bogs and a few small loughs interspersed; yet many parts of them, especially of Boffin, present good pasturage and some good tillage, and there is much more land capable of being reclaimed; the mountainous parts afford grazing for sheep and black cattle. The cultivation, which is in the valleys and up the sides of the mountains, on their south-east aspect, consists chiefly of potatoes, barley, and oats. The potato crop, on which the chief subsistence of the islanders depended for the last two years, inasmuch as the fish had ceased to frequent their coast, had utterly failed the last season; and the consequence was severe distress and starvation, followed by fever and dysentery, which proved very fatal during the months of June and July.

“ The island of Boffin, by much the larger of the two, and nearer to the mainland, contains a population of about 1600 inhabitants, who live chiefly by fishing; they are lazy, indolent, and superstitious, and yet—though it may appear paradoxical—they are a hardy, expert, and enduring race of fishermen, for fishing seems to be their proper calling.

“ On my arrival in this district I found that the epidemic had extended itself over both islands, and that there had been many deaths during the two previous months. I may mention that in the very first cabin I entered, after landing, I found the mother of the family lying dead on some straw, and was informed that her son, a boy of 15, had been buried that morning. The interior of the cabin was most wretched, without pot, kettle, or any of the utensils which are commonly met with in an Irish cabin, with only some straw, on which the miserable inmates stretched themselves, and which was their only bed and bed-

ding. This was no solitary instance, for many such cases presented themselves to me before I left the island.

“ I found the number of fever cases, in both islands, to be about 100, with many cases of dysentery and diarrhœa. I began at once to do what, under the circumstances in which I was placed, appeared to me to be best, and what the necessity of the case demanded. I bought up all the milk I could get, and distributed it among the sick, most of whom had nothing to drink but water; and after a few days I was enabled to allow my patients a little rice, in addition to the milk, through the generosity of the Friends’ Central Committee, who, with their wonted liberality, forwarded me a cargo of rice, on my communicating to them the state of want and destitution of the sick in the district. A dispensary and temporary fever hospital were next fitted up, by which means the progress of the epidemic was arrested, and, finally, got under completely in three months.

“ I was unable to ascertain the particular period at which the epidemic had commenced in this district, but it had prevailed, for at least two months, previous to my arrival, and had proved very fatal. The cause of so many falling victims to it, at its commencement, arose not only from the miserable state of destitution and want the people were in, but from the improper mode of treating it adopted by the relatives of the sick, chiefly arising out of their superstitions.

“ When the hospital was first opened, I had numerous enemies to encounter, and many difficulties to be overcome, owing to the ‘ fairy doctors,’ and the ignorance and superstitions of the people. However, after some time, when they saw the patients whom I had in hospital recovering, and some, who could not be persuaded to come into hospital, dying, their prejudices gave way, and they began no longer to look upon me as a dangerous emissary from the Government.

“ The inhabitants of those islands dwell in villages, which have either a southerly or an easterly aspect, and of which

there are six in Innis Boffin. The number of houses or cabins in each village is from forty to sixty. The fever prevailed in all of them, but in some much more than others. This could be readily accounted for, as the village where filth and want of cleanliness prevailed, with foul, stagnant pools immediately before the doors of every cabin (for each cabin has two doors, a front and back, so that they can shut or open either, according as the wind blows), suffered much more from the epidemic than those where more attention was paid to cleanliness.

“It is worthy of notice that the epidemic fever appeared here so much later than in Dublin, or in other places on the mainland. This was also the case when the pestilential cholera visited this country in 1831–2; I was informed that it did not reach the island of Boffin till 1834, and then it only got into one village, and proved fatal to about a dozen persons; which, as soon as the people saw, they were struck with such panic, that they all, men, women, and children, abandoned their houses, and fled to the mountains; the result was, that the cholera at once suspended its ravages. No more deaths occurred.

“The epidemic, as I saw it in this district, showed itself in its distinct and peculiar character. It could not be easily confounded with typhus fever; the symptoms were altogether so dissimilar, and the termination also so different,—as it was generally in recovery,—when properly treated the proportion of deaths being one in 100 of those cases I had under my care.

“The evidence in favour of contagion was most conclusive. When any one individual of a family got the fever, and was not immediately removed to hospital, in a few days every member of the family was attacked; and, on the other hand, where separation of the sick from the healthy was attended to at once, the disease was arrested. I saw some very striking instances of this. In one case, a boy of eleven years old was removed to hospital, and after twelve days, not being entirely recovered from a relapse, he got out of hospital and went home

to his family, six in number; the result was, every one of them took the fever. In another case, an old man of 69, who had been removed to hospital on his being seized with fever, and who, when recovering from a third relapse, was taken away by force by his wife, who entered the hospital in spite of the nurses, and literally dragged the poor old man, worn down with sickness, out of his bed, and made him walk nearly a mile to his own house. The result in this case also was, that the wife and five children, the entire family, were attacked by the disease.

“The inhabitants of those islands are, with the exception of three or four families of the middling class of society, all of the lowest grade, so that I had but one class to treat, while I might say I had grades in that class, who were differently affected by the disease. Those who had been suffering from want and starvation (and they were the great majority of those who were seized by the epidemic) had a low fever which scarcely deserved the name, and which presented some peculiarities. It commenced with cold and shiverings, headach, pains in the limbs, thirst, hot dry skin, white tongue, as if covered over with magnesia; pulse accelerated, weak, and feeble. These symptoms continued from five to seven days, when the fever terminated, apparently by diaphoresis, and in many instances without any well-marked critical phenomena. The patient continued in this state generally from three to five days, with great craving for food; and no matter what plan of treatment was adopted, full or low diet, or whatever course was pursued, relapse was sure then to follow in almost every case. This was a very peculiar feature of the disease. The primary fever in many cases was so slight that they walked or rather staggered about with it, and would not come into hospital, but after three or four days the fever returned with much more intensity than at first, accompanied, in severe cases, by gastric or gastro-enteric derangement, which was followed by great prostration of strength.

The relapse, as well as being more severe, was also of much longer duration than the primary fever. After continuing from seven to fourteen days, it generally terminated by sweating. There were other critical phenomena, as diarrhoea and epistaxis, and in females the appearance of the catamenia; but these, with the exception of the last, were rare. The period of convalescence varied from one to three weeks.

“ In the grade that had not suffered from want of food, and but few comprised this class, I observed the fever had a greater tendency to assume a typhoid character. Petechiæ appeared in a few cases of this kind, but were by no means common; and dysentery or diarrhoea frequently came on towards the end of the fever.

“ All ages, from the child on the breast to the old man of 70 on his staff, were attacked by the epidemic fever. Males were not more liable to be affected by the disease than females. At first, on the outbreak of the fever, more men were attacked by it than women, but towards its termination the number of females preponderated. Young persons were more susceptible of the disease than the aged, and those chiefly attacked were individuals from ten to thirty years of age.

“ A very remarkable feature in the epidemic fever, as it appeared in those islands, and one which attracted my attention as being peculiar, as I did not witness it to the same extent in other districts was, the immunity from affections of the brain and thoracic viscera. Bed-sores, too, were very infrequent, but abdominal complications were common. Whether these peculiarities depended upon the causation of the disease, the race, the climate, or the particular season of the year, I will not take upon myself to determine.

“ As to the pathological condition of the glandular viscera of the abdomen, especially that of the spleen, enlargement of this viscus was occasionally to be met with, but it was by no means of frequent occurrence. Is this complication attendant on the fever or on the dysentery?

“Dysentery and anasarca sometimes occurred as sequelæ, but were not frequent. However, if by sequela is meant what follows the fever, the most usual was starvation or the work-house. The latter was literally regarded by the famine-stricken islander as transportation, and he would often prefer the former sooner than travel forty or fifty miles to a poor-house, where he believed he was to be confined, as in a prison, to eke out a miserable existence for the remainder of his life.

“The mode of treatment was very simple: all that was necessary, in the great majority of cases, was general treatment, which consisted in attention to the bowels, the use of diaphoretics, and the moderate allowance of mild nourishment. In no one instance did I find it necessary to have recourse to blood-letting.

“When a patient was admitted into hospital, the first thing, after having his feet, and, if necessary, his whole body washed with warm water, was to put him to bed and give him a drink of warm whey, and in an hour after, as the bowels were usually constipated, a purgative draught, usually castor oil with oil of turpentine, which generally produced its effect in the course of three or four hours. I sometimes gave the compound powder of jalap, with calomel, in the form of bolus, which I found to answer equally as well; afterwards diaphoretics were administered; and where there was much gastric irritation, with tenderness of the epigastrium, it was relieved by a small blister or sinapism applied to the region of the stomach.

“In the relapse, particularly when typhoid symptoms came on, the usual stimulants administered were wine and whisky in the form of punch; and when there was present much depression of vital power, with hot skin, and dry parched tongue, camphor and carbonate of ammonia, with Hoffman’s anodyne liquor, were found very useful.

“When dysentery supervened, I generally found it to yield to the acetate of lead and opium, three grains of the former with a quarter of a grain of the latter, in the form of pill, given every

third hour, and two table-spoonfuls of a bark mixture, given in an hour after each pill; at the same time employing hot turpentine stupes to the abdomen, and, in some few cases, opiate enemata.

“The other sequela of the fever, anasarca, recovered under the use of tonics and diuretics, with nourishing diet, and the occasional employment of a purgative when the bowels were sluggish, as was generally the case. The medicine I preferred for this purpose was the compound power of jalap with calomel.”

The following is the report of Dr. Ormsbey, of Arran Island, in somewhat the same locality, off the Galway coast, received in January, 1849:

“According to your desire, I send you an account of the state of fever in this district for the last three years. I could hardly say we were ever without it, but it was by far more prevalent in the winter and spring seasons. Previously to that period the people here were quite healthy. I am fully of opinion that it is contagious, yet during the epidemic I have known cases occurring where one member of a family, and sometimes more, caught the disease, and continued in the house with the remainder of the family, without conveying it to them; but I must say such cases were very rare. With the exception of a few public officers residing in the isles, the inhabitants are all of the one rank in society, although some of them may be in more comfortable circumstances than others; therefore the fatality amongst them was equal; but from what I can learn from other quarters, rich and poor were alike attacked. The deaths in my own immediate district were about five per cent. It would be but a very reasonable conclusion to come to, that the difference of food would cause the difference in symptoms: for instance, those living on Indian meal were more liable to dysentery than those who were in the habit of using other food; yet Mr. Martin, the then Member for this county, and several other persons in respectable life, died of dysentery after fever.

“ There was little or no disease among the cattle here. The younger branches of the family were generally first attacked, except when old women brought the contagion from houses where they were in the habit of visiting. In the last eighty-six cases I had, seventy-one relapses occurred; such a large number was heretofore unknown to me, and in this particular did the epidemic of last year differ widely from that of former years. There was a very remarkable difference from the common typhus; generally speaking, the symptoms increased progressively to the crisis, or what nurse-tenders call ‘the cool.’ In all the relapsed cases that came under my attention during the past year, the symptoms presented a mild appearance until the fourth or fifth day, when they progressively disappeared until the tenth or twelfth day, when apparently all fever was at an end. Although I endeavoured to guard against relapses by every means in my power, yet at the end of fifteen or sixteen days I found my hopes frustrated, and the disease returned in a far more virulent form than that of the primary. After the second attack from six to eight weeks passed before I could say the patient was out of danger, and in such cases the deaths were nearly double the amount of those in the primary cases. I would term crisis, in this form, when the edges of the tongue assume their wonted redness, and the brown coating disappears; the eyes recover their usual vivacity, the pulse comes to its proper standard, and the skin begins to have a moist, healthy, warm feel. Purpuric spots were rather uncommon; bed-sores were not common here. The length of convalescence in a great measure depended on the care the patients took of themselves, and the food they used. In good habits and with proper nourishment, about three weeks generally enabled them to follow their usual business. I am fully of opinion the treatment and medicine employed must entirely depend on the constitution, habits, and mode of life of the patient. In a good healthy habit I generally commenced with an emetic of tarta-

rized antimony in very divided doses; when it had the desired effect I followed it up with a cathartic, but as it often happens that the emetic acts in both capacities, I waited a sufficient time before I gave the latter; if after this I found the skin hard and dry, I gave diaphoretics composed of camphor and antimony. Should the head be engaged I ordered cold applications, and sometimes I resorted to blistering, and so on, continuing to watch the state of the bowels and the skin; but my best efforts have often been baffled by quacks and ignorant nurse-tenders. The proportion of sick during the last year was about one to forty. We never had an hospital here of any sort, but I am sure a well-regulated one would be far preferable to letting the wretched beings lie in their own dirty cabins.

“Along the coast of Connemarra, for near thirty miles, where the villages are very small and hundreds of cabins detached, sickness and death walked hand in hand, until they nearly depopulated the whole coast, although they had the advantage of three medical men sent specially by the Board of Health, two of whom fell victims to the disease. Another criterion I will give to judge of the mortality by. During the years 1847 and 1848, four medical men died between Clifden and Galway; three between Oranmore and Athenry, a distance of about seven miles; four more between Anadown and Kilmain, making in all eleven; residing in open districts where the houses were for the most part detached; yet during that period all the medical men residing in Galway, as thronged and as filthy a town, perhaps, as any in Ireland, escaped. Change of diet made a marked change in the appearance of the peasantry, and in many cases brought on dysentery. In low fever and debilitated habits I used wine when I could procure it, and sometimes weak punch, with very good effect. When called in during the incipient stage of fever to young plethoric patients, I have bled in many cases with happy results; but I am of opinion that bleeding in any stage of fever is a practice that ought to be resorted to with great caution and discretion. I am not in the habit of

using any preparation of mercury, except calomel, and that in the manner I mentioned before, and sometimes combined with antimonial powder. Respecting the use of opium; in laxative habits I have used it with good effect, where the head was not engaged, and in such habits I prefer Dover's Powder as a diaphoretic to antimonials, but, like the lancet, it should be used with skill and great caution."

Dr. Turner, of Tuam, county Galway, writes:

"In reply to your queries, I beg to state that this locality was visited by the late epidemic of fever, in the latter end of March and beginning of April, 1847; and which arrived at its severest point in the latter end of June and beginning of July; the neighbourhood having been previously much as usual in regard to health.

"I have no hesitation in pronouncing it to have been contagious. It attacked the healthy and delicate indiscriminately, but chiefly the lower classes. When it did, however, attack the higher classes, it was much more fatal, and attended with greater relative prostration through its entire course.

"It was a frequent consequence of want of food, and was then much more unmanageable and liable to relapse; it varied much in its period of accession, and was frequently preceded or accompanied by dysentery; and all those cases generally terminated fatally.

"Purpura was a late symptom, and not very frequent; gastric affections were the most frequent complication; next in order were pulmonary; and lastly cerebral,—the last rarely appearing except in the latter stages of the affection.

"I think females were more liable to this fever than the males, who, in their turn, were more liable to dysenteric affections, which prevailed very much about the same time. Indeed these ought to be classed as different types of the epidemic.

"Ten days was about the duration of the attack; any cases that did not run to that length were liable to relapse; and the secondary was always more severe than the primary attack,

and more generally attended with maculæ, petechiæ, or purpura.

“The symptoms presented little diversity except as to severity, and marked crisis was uncommon; where it did occur, perspiration or diarrhœa were the usual forms it took.

“The tendency to bed-sores was very great in the relapsed cases, and they were unmanageable and inclined to spread. In many cases cancrum oris suddenly set in and destroyed the lips.

“In all cases convalescence was very gradual, and accompanied by great debility, pains in the joints, and eruptive disease of the skin, in many.

“The treatment I found most serviceable was a stimulating and nutritive one;—broths, rice, arrow-root, and port wine, quina, camphor, and opium (especially where the tendency to cancrum oris or to bed-sores existed), in conjunction with carbonate of ammonia. In no case had I recourse to blood-letting in any form, except in the application of two or three leeches at the commencement of cancrum oris, which I invariably found of great service. I found great benefit from the administration of hydrargyrum cum cretâ, in combination with dried soda, where the tendency to diarrhœa prevailed and in the pulmonary complications; blisters repeated frequently were of great benefit.

“The mortality was far greater, in my opinion, in towns than in the rural districts, and out of hospital than in it; but I cannot give any decided grounds for coming to that conclusion, as many people died without having applied for medical relief at all, and of those who did, many never applied a second time, or were totally lost sight of.

“There were 836 cases treated in the Tuam Union Work-house Hospital, for the half-year ending 29th September, 1847, which embraces that period during which the epidemic raged. Of these forty-five died; but I must observe that many of those cases came into hospital in such a state, from starvation and disease, as to preclude all hope of recovery.”

Dr. French, of Ballygar, near Ahascragh, county of Galway, informs us:

“The sanitary state of this district previous to spring, 1846, had been better than for many years previously. Shortly after the potatoes had ceased to be an article of diet, purpura or acute scurvy first attacked the poor. I observed it on the mucous membrane of the mouth, in white blisters, in some running on to sloughing, and affecting the throat and tonsils: so general was it that I entered it as an epidemic of the season in my report of the Ballygar Dispensary. Purpuric eruptions soon followed, being very prevalent in June and July, 1846, characterized by livid spots on the hands, face, chest, and other parts of the body, and in many attended with hemorrhage from the bowels. Diarrhœa and dysentery followed extensively, either as an idiopathic affection or as a sequela of purpura, attended in their advanced state with general anasarca and debility.

“Such was the state of this neighbourhood when the epidemic appeared. The fever at first was very fatal which attacked the feeble, half-starving creatures, and assumed a typhoid character, recognised by great prostration of strength, quick pulse, tongue parched and of a yellow colour, eyes sunk, and the lids stuck together by a tenacious secretion; there were also cerebral affections.

“We also had a fever of a milder form, which was fast propagated by contagion, and not so fatal; but I have on record as many as eight and nine in one house ill at the same time. The symptoms at first were those of a mild continued fever, subject to relapses, and in many attended with a maculated eruption. In some cases, on the eruption disappearing, delirium (such as recorded by Dr. Graves) set in, but soon, under the mode of treatment he recommends, recovered. The fever, in a few cases, terminated in convulsions, coma, and death; in others a favourable crisis commenced, as soon as the ninth, eleventh, or thirteenth day by perspiration, diarrhœa, or epistaxis. There were but few of the latter, and they were all young persons.

“The relapses were not alike in all. We had sometimes an aggravation of the first symptoms; in others typhoid fever set in, with violent head affections. We continued thus till the winter and spring of 1847; when, as soon as the vegetable kingdom afforded a mixed diet, the general health improved, fever and bowel affections were not so frequent, and the healthy state of the district improved much; but on the return of winter and spring, in 1848, fever of a typhoid nature increased, with well-marked petechiæ, and we recognised it as the fever of former times (that is previous to the year 1846) so that I would call it the maculated fever caused by bad and unwholesome food, or the effects of starvation, and typhus with petechiæ, the fever natural to this climate.

“The visitation was very severe in this district. The poor were badly prepared for the change in diet; nurses lost their breast milk, so that infants and the aged and infirm soon fell victims to the disease. The crowding together of the poor for relief had a tendency to spread contagion, as there was an offensive effluvia from the bodies of some who were suffering from bowel complaints. We had no hospital accommodation, but a temporary shed was built for the destitute, calculated to hold six or eight, without any provision for the sick in it. I myself had an attack of typhus, from which I recovered with difficulty, and continued three months in a very delicate state.

“To lower the system by venesection was not considered necessary in the simple continued fever, as indicated by flushed countenance, strong pulse, and white tongue. The treatment was, mild purgatives with diaphoretics at first, which were varied according to the symptoms. In the latter stage support was necessary; stimulants, beef tea, and wine, were then ordered. But in typhus, mercury, either the grey powder or calomel, was given in small doses, so as to affect the system. Shaving the head, and applying cold lotions (leeching sometimes), constituted the treatment in the first stage. In the second stage, camphor, ammonia, &c., were given, followed by wine, and

beef-tea, &c., watching, and varying the treatment according to the symptoms. Opium was seldom used. If diarrhœa set in, Dover's Powder, with calomel, was given. Hot turpentine stupes, and counter-irritation, was in most of these cases of use.

“The anasarca that followed was best treated by active exercise in the open air; the administration of alkalies in full doses; keeping up a free action of the bowels, and wholesome diet. Diarrhœa and dysentery were more difficult to manage. What was considered formerly of great injury and as bad treatment, proved of vast use in some cases,—the vegetable acids. There was one case that resisted all other remedies until I gave muriate of baryta, morphia, and camphor, as recommended by Dr. Walsh.”

Dr. Lynch, of Loughrea, county of Galway, has answered the questions contained in our Circular, *seriatim*, in the following extensive report:

“The late epidemic of fever has been prevalent in my neighbourhood.

“Previously to the breaking out of the epidemic in 1843–4, there was nothing remarkable in the sanitary condition of this district. During the preceding five years maculated typhus, generally terminating on the eleventh or twelfth day, and seldom followed by relapse, was more or less prevalent, and varied remarkably in severity in different years. In the year 1840 the type of fever was very bad indeed, and very many of the gentry and middle classes were cut off by it. With the exception of that year fever assumed for many years in this district the features of typhus melior, and was fatal in the proportion of about one in six amongst the better, and one in fifteen amongst the lower classes; but during the year 1846 most of the cases assumed the worst form of typhus, and few were rescued.

“The present epidemic first showed itself in the spring of 1843. About that time maculated fever suddenly disappeared

amongst the poor, and was replaced by the new epidemic constitution; but it was not preceded by purpura or scurvy.

“Pneumonia prevailed much amongst black cattle and horses at the same time, and was extremely fatal.

“I cannot say exactly at what ages the greatest numbers were attacked, but adults, and children over ten years, were affected more generally than very young children. I never saw an instance of maculated fever in a child under five years, but I saw many instances of the short relapse-fever in children under that age. Females were more liable to the disease than males.

“I consider the disease to be, like typhus, a form of continued fever, and I believe that all the varieties of continued fever, such as we see them in Ireland, and in the great towns of England and Scotland, are contagious. I believe, however, that although many proofs of the contagious nature of the late epidemic were observed by me, that in the vast majority of those persons who have suffered from it, whether in its well-marked epidemic form, or under the form of typhus, it occurred independently of contagion. Thus, in very many instances, persons working in a field, and a few minutes before in perfect health, were suddenly seized with the usual symptoms of fever, and in a very large number of such cases I could not ascertain that there was any exposure to contagion.

“Again, nothing was more common than for persons, while in perfect health, to perceive a bad smell going along the road, and immediately sickening. I knew an instance of a young man getting his two brothers to sleep along with him for forty-eight hours, for the purpose of dispelling the incipient rigor of fever, and yet they both escaped. There can be no doubt, however, but that the disease is contagious. Nothing was more common than for a person to catch fever from cold, return home, communicate the disease, and infect successively a whole family. Here the spread of the disease was clearly owing to contagion, as, although the first person caught fever from exposure to cold,

the fevers of the rest of the family could not be traced to that or any other cause except contagion. A very remarkable case occurred to my immediate knowledge, illustrative not only of the contagion of fever, but of the identity of the poison of ordinary maculated typhus, and of the short relapse-fever, as the epidemic under consideration has been termed. A gentleman near Athenry caught maculated fever in its worst form, and died on the ninth day. The village barber, who was in the constant habit of shaving fever patients, and had not the least dread of the disease, went to shave the deceased gentleman, and sickened in the room. He went home, and died on the tenth or eleventh day of the disease. The physician in attendance, Dr. M'Calman,—who was particularly fearless, and foolishly unguarded in exposing himself to the contagion of fever, and who was consequently, so far at least, not predisposed to the disease, —got sick while administering an enema to the gentleman the day before his death, and sank on the fourteenth day, after passing through a most malignant form of typhus.

“ A coachman, who had formerly been in the service of the deceased gentleman, went to his funeral, and, while acting as one of the coffin-bearers, got a shivering, and was attacked with fever, not of the maculated type, like the others, but of the type of the prevailing epidemic, that is, simple continued fever, characterized by a tendency to frequent relapses. This circumstance goes to prove the identity of the recent epidemic with ordinary typhus, as well as its contagious nature. It seemed to me, however, that, although the disease was decidedly contagious, still that contagion played only a secondary part in its propagation. It appeared to me that, in most of the cases where contagion was suspected as the cause of fever in individuals, that the sufferers were almost constantly in attendance on the sick, or else that they were exposed to contagion of a very concentrated and active description. Thus, in the instance of the persons who caught fever from the gentleman to whose case I have just alluded, the morbid

poison must have been very energetic; and in the records of Irish epidemics similar instances are not uncommon.

“In Barker and Cheyne’s account of the epidemic fever in Ireland (vol. i. p. 161), an instance is given in which a number of persons, notwithstanding the greatest attention to cleanliness and ventilation, were infected by one individual, showing that, like what occurs in all other morbid poisons, the tendency to communicate fever to a healthy person is greater in some fever patients than in others, no matter what may be the type of the disease, whether mild, maculated, or, as I have observed, the remittent fever of children. The number of persons who have contracted the disease, whose duties brought them constantly in contact with fever patients, during the past year, such as physicians, clergymen, and hospital nurses, clearly shows the contagious nature of the late epidemic. But it is equally worthy of note, that most of these persons were attacked with maculated typhus, and comparatively few with the short relapse-fever, although chiefly exposed to the contagious influence of the latter form of the disease. Few of those whose duties brought them into constant contact with the sick took the disease until well dosed with the morbid poison, in consequence of frequent and long-continued attendance on fever patients. In conclusion, then, I am of opinion that, although the late epidemic was of a contagious nature, its extensive diffusion must be traced to other causes besides contagion, which, however, was, no doubt, in many instances, in operation. When proper ventilation and cleanliness is observed, when there is no marked predisposing cause, as chilled surface, fear of contagion, fatigue, or an internal conviction, which often exists, that the individual cannot escape the disease,—I think the danger of catching fever is very slight. Except in three or four cases out of many hundreds of persons affected with maculated fever, whom I have attended within the last ten years, I know of no instance where the disease was communicated among respectable families.

“I may mention another circumstance which illustrates the contagious nature of the late epidemic. A member of a gentleman’s family in this county caught fever, no one could tell how; it was mild, and great care was taken to keep the rest of the family away from the part of the building occupied by the sick person; still, although the house was large, and every precaution made use of, several of the children fell ill successively, and as each fresh case occurred, the same precautions, as to isolation of the sick, were strictly observed. Just about the time when the last of the children attacked was convalescent, his uncle came from a distance to pay a visit, saw the child, and, although in perfect health on his arrival, fell sick almost immediately after, and had a severe fit of maculated fever. Only one of the children was maculated, although, in this particular instance, the successive attacks might be possibly traceable to the same cause which produced the disease in the first individual.

“I think it next to certain that the last person attacked, namely, the uncle, caught the disease from contagion. I have attended a good many medical men in typhus fever during the prevalence of the late epidemic, and it seemed to me that in very few instances could the contraction of the disease be fairly traceable to the influence of contagion, as, in most instances, these unfortunate gentlemen were exposed, more, perhaps, than any other class in the community, to the ordinary causes of fever, such as exposure to cold and wet, great fatigue, and unusually great mental anxiety. I think it questionable whether these gentlemen would not have caught fever under those circumstances, even if not exposed to the influence of contagion.

“I have also attended a large number of clergymen in this district, in fever, during the past epidemic, and I must say, that, in most instances, it was hardly fair to decide whether it was the influence of incessant fatigue and mental anxiety, or contagion, which caused the disease in them. I often said to

myself, when seeing such persons, and knowing how over-worked they were in body and mind, and considering, too, the numbers who were struck down by fever without exposure to contagion at all, “may not these persons have caught fever from cold and fatigue, and not from contagion?”

“When the disease assumed the maculated type, the symptoms and course of the disease in the lower and in the upper classes were pretty similar; but I remarked that those persons of the middle and upper classes, who were affected with the short relapse-fever, recovered more quickly, and did not suffer from the sequelæ of fever, as dysentery, dropsy, and other affections which shall afterwards be noticed, so much as the poor people. I saw no instances of the short relapse-fever amongst the gentry, except in clergymen and physicians. Many of what are termed the middle classes, such as shopkeepers and small farmers, however, were under my care in the relapse-fever. All the cases of fever I have met with amongst the gentry, and they were very numerous, were instances of maculated typhus, lasting from eleven to fourteen or seventeen days before any amendment was observed.

“Most of the cases of fever supervening upon the starvation state were characterized by repeated relapses and short febrile attacks. Dysentery and anasarca constantly co-existed with or followed such cases. Sudden deaths were common in such patients.

“The short relapse-fever which prevailed amongst the lower and some of the middle classes, was very different from the maculated typhus, or any other form of continued fever which I had myself personally observed; but in the account of the epidemic fevers of Ireland, written by Barker and Cheyne, and also in many other reports by Irish physicians, I find that an epidemic similar to the one under consideration has frequently existed in Ireland; and I cannot see any circumstances in which the late epidemic differed from former ones, which are described in the records of Irish medical literature.

“Dysentery frequently preceded and accompanied fever.

“The stomach was the organ most frequently attacked; next the bowels; and lastly the lungs. The head too was much affected, as shall presently be seen.

“The mortality amongst the poor was about one in twelve. Amongst the middle and upper classes the mortality varied according to the type of fever. The maculated form was very fatal; one in four perished. The short relapse-fever was by no means fatal in the same rank of life, the deaths certainly not being more than one in forty.

“The remaining queries will, perhaps, be best answered by describing the symptoms of the epidemic in each of its forms, viz.: the short relapse, and the maculated form.

“The short fever began with a violent rigor, often abruptly seizing a person in perfect health; at others after a few days of indescribable malaise, severe headach, throbbing of temples, intolerance of light and sound, suffusion of face, sleeplessness, remarkable anxiety of countenance, and jactitation, with very rapid pulse, from 110 to 120 or 140, white furred tongue, and, in the great majority of cases, constant and uncontrollable vomiting of greenish, bitter fluid, with or without epigastric tenderness, and great thirst. In many instances there was pleurodynia with short, irritative cough, the pain in the chest being very troublesome, without any stethoscopic indication of pulmonary or pleural inflammation. In others, bronchitis accompanied the outburst of the disease. After continuing in this state for six or seven days, tossing about in bed, with anxious and oppressed breathing, little and dreamy sleep, great prostration of strength, very hot skin, and ardent thirst, all the symptoms would increase for a few hours, when suddenly a profuse perspiration would break out, or, more rarely, epistaxis would take place, or both together. Or, again, profuse diarrhœa, with complete and abrupt cessation of all the bad symptoms,—the pulse quickly regaining the natural standard, the tongue cleaning, the appetite

and sleep returning, the countenance resuming its tranquillity, and the patient loudly congratulating himself on his sudden and complete transition from great discomfort and anxiety to complete ease,—would show that the fever had abated. During the few succeeding days many continued rapidly to improve and to become apparently quite well; others suffered from violent muscular pains in the limbs; and several were attacked with pretty copious epistaxis many days after the critical effort, and before the relapse. In most cases there was a well-marked '*exacerbatio critica*' before the development of crisis; the pulse being 140, the anxiety extreme, the difficulty of breathing very remarkable, the face and lips becoming deadly pale, and great complaint being made of oppression at the pit of stomach.

“ At a period varying from seven to fourteen days after the first critical change, a relapse occurred in ninety-nine out of every hundred cases. It was characterized by rigors, headach, anorexia, white tongue, accelerated pulse, and, in very many instances, by nausea and vomiting. In the favourable cases perspiration occurred in a day or two, and relieved the patient; in other cases, uncontrollable vomiting, great thirst, very rapid pulse, a hectic circumscribed flush of countenance, pervigilium, delirium, jactitation, dry, brown tongue, involuntary evacuations, intense heat of skin, gradually increasing debility, and stupified expression of countenance, were observed. Such cases often, after lingering for a week or two, terminated fatally; others died suddenly: thus a person suffering under the relapse would seem to be getting on very favourably, when suddenly vomiting and pallid countenance, with remarkable and sudden sinking, followed by death, would occur. This tendency to sudden death in the relapse-fever was not limited to the febrile period of the disease, it also occurred during convalescence; and I find that Dr. Reid(a) has recorded many such instances in an epidemic

(a) Trans. of the College of Phys., vol. v. p. 266.

resembling the present, which existed in Dublin in the year 1826.

“ Few were attacked with diarrhœa or dysentery during the primary attack, or the interval between it and the relapse, but very many were seized with dysentery during the relapse, or immediately after its cessation. No means that I could devise prevented a relapse in any instance of the short fever which I observed, whether in the starving peasant or well-fed, healthy farmer, or even amongst the gentry. Some I confined to bed during the entire interval between the primary and secondary attacks; others were during the same period allowed to walk about, or to change the air; a most abstemious diet was enforced in some, a liberal diet was indulged in by others: and the greatest attention was paid to the bowels and skin. Quina, in large doses, and bark, were tried, under the impression that the disease might be of an intermittent character; change of scene, in short, everything was tried to check the tendency to relapse, but all in vain; it inevitably came on in the vast majority of cases, and in some instances so often as three and four times, causing tedious and protracted convalescence. In most cases the relapse occurred as abruptly as the primary attack, with headach and rigor, in others with a remarkable degree of thirst. A certain whiteness of the tongue, and an anxious, sickly expression of countenance, preceded the second attack for a day or two. Towards the close of the epidemic the primary attack often assumed the character of febricula, and only lasted three or four days, but the relapse was not the less certain. Pustular eruptions about the mouth were very common at the period of crisis, also common itch, boils, parotid abscesses, dysuria, and laryngitis. Epistaxis was very common, it frequently occurred during the first two or three days, without affording any relief.

The relapse-fever was very exhausting in its effects on the constitution; and the period of convalescence, dating from the termination of the last attack, was in most instances unusually

long. It was almost impossible to restore the health of those persons who suffered from several relapses; they became a prey to the various sequelæ of fever, or continued valetudinary for months, with pallid aspects, puffed ankles, palpitations, or flutterings at the epigastrium, unaccountable debility, noise in the head, dimness of vision, and often diarrhœa. Bed-sores were very common in cases characterized by repeated relapses, and when the case was tedious and lingering. It seemed to me that the tendency to bed-sores arose from long confinement to bed, and consequent pressure, rather than from any peculiar tendency in this epidemic fever to produce them. I saw nothing in their appearance different from ordinary bed-sores.

“ Towards the close of the epidemic the rigor was often absent in the secondary attack, and but little headach was complained of. Dysuria was very frequent in the secondary attack, particularly in women, the patient complaining of frequent desire to make water, and great straining; in a few days this symptom spontaneously ceased, and was not much relieved by any of the usual remedies. In many instances general convulsions suddenly occurred without any obvious cause, in cases which seemed to be progressing favourably, and death invariably followed. Petechiæ appeared in some of the secondary attacks, but never in the primary. In some cases delirium of a violent character occurred during convalescence, the patient suddenly becoming delirious, incessantly talking, with very rapid, weak pulse, constant jactitation, perfect unconsciousness, flushed face, contracted pupil, and in some cases profuse perspiration, with obstinate pervigilium: such cases were rare, but I met with five or six instances, all hospital patients. In all such cases depletion was out of the question; I tried tartar emetic and opium once, but incessant vomiting and rapid and fatal sinking speedily ensued; small doses of laudanum apparently saved the two last cases. I saw in one such case, a single dose of muriate of morphia—a quarter of a grain—followed by fatal coma.

“ Amongst the sequelæ of the short relapse-fever which I

witnessed, may be enumerated anasarca and ascites, diarrhœa and dysentery, gangrene of the limbs, and in a few instances of the chin and top of the nose, vesicular and pustular eruptions about the mouth, cancrum oris, ophthalmia, purulent depositions in the extremities, parotid abscess, abscess under cervical fascia, amaurosis, a crippled and painful condition of the lower limbs, diabetes, phthisis, a swelling of the lower limbs like phlegmasia dolens, and common itch.

“The second or maculated form of the epidemic differed widely from the relapse fever; it was, in fact, the well-known typhus of this country, and differed from the latter in many respects:—for instance, in the invariable tendency to one or more relapses; the absence of petechiæ in all the primary and most of the secondary cases; the remarkable tendency to hemorrhage from all the mucous outlets, as the nose, bowels, vagina, &c.; the invariable occurrence of severe muscular pains of the limbs after the crisis and at the commencement of convalescence; the absence of deafness, which is observed in seven out of ten cases of maculated fever; the absence of delirium, which rarely or ever occurred in the primary attacks, or during the relapse, except in very severe or fatal cases, although there might be confusion of mind and talking during sleep or dreaming; and the invariable occurrence of a critical termination, either by perspiration, epistaxis, or diarrhœa. The frequency of sudden deaths during the secondary attacks; the great tendency to dropsy and anasarca during convalescence; and lastly, the remarkable fact that many had two or three separate attacks of this form of fever, although enjoying good health for months between each attack, served to distinguish this form of the epidemic. Few got maculated fever twice within a short period of time, and I believe that few have contracted it oftener than once in their lifetime, although there are of course exceptions, as I have myself witnessed(a).

(a) The report of Drs. Cusack and Stokes on the mortality amongst our Irish medical practitioners proves that several medical men have had fever

“ With respect to the treatment of the relapse-fever, I found from experience that in the primary attack little medical interference was useful or requisite. A dose of calomel and rhubarb, clipping the hair, cold lotions or affusions, and, when the head-ach was violent, leeching and cupping in the middling classes, and a blister to the nape in the poor, weakly, hospital patients, gave most relief. Saline effervescing mixture, a blister to the epigastrium, five grains of calomel with one of opium, sometimes, but rarely, relieved the vomiting. In all cases the critical evacuations relieved the symptoms, and did not seem to be hurried by any of the usual remedies. Plenty of cold water, whey, and barley-water, ventilation, and cleanliness, was all that was required amongst the poor; but local depletion, moderate purgation, cold affusion on the head, leeches to the epigastrium where there was tenderness, and calomel and opium, were decidedly useful, as palliatives, in the more comfortable classes.

“ In hospital practice I was deterred from even local blood-letting by the exhausted and debilitated condition of most of the patients; and it did not seem to me that, in the numerous cases in which I tried local blood-letting in private practice to relieve head symptoms in the form of fever under consideration, much was gained beyond a temporary diminution of pain. In most instances the pain returned a few hours after the blood-letting, or was succeeded by an almost equally distressing buzzing in the ears, a symptom which I did not observe so frequently where no local depletion was employed.

“ Aperients had no effect in subduing the severity of the vomiting, neither had effervescing mixtures, blisters, or turpentine stupes. The only medicine I saw give ease was five grains of calomel and one of opium; this often checked the vomiting. At first I rather encouraged the vomiting by tepid drinks, but after a day or two, or when it became incessant and exhausting, I

twice, and some three times; the late Dr. Curran had fever twice, and was spotted on both occasions.—ED.

gave calomel and opium, and applied a mustard poultice to the epigastrium. These means often succeeded in affording ease from the vomiting, but much oftener failed. Hydrocyanic acid and creasote were often tried without advantage. In every case, however, whether the case was left to nature or that remedial measures were used, about the fourth day, or, at latest, as soon as the perspiration broke out, the vomiting abruptly ceased.

“Dysentery very often sprung up during the second attack, or during convalescence after the first. In the acute stage, when there were tormina, with tenesmus, frequent and bloody stools, a dose of castor oil, with fifty drops of laudanum, or rhubarb with aromatic powder, followed by calomel and opium, blisters or turpentine stupes to abdomen were found useful. Rice milk, and hydrargyrum cum cretâ, with powder of chalk and opium, and ipecacuanha in half-grain doses, was also a useful combination. In many bad cases, large doses of calomel and opium from five to ten or fifteen grains, with two or three of opium, was most useful even without the mouth being affected; and I found that the opium alone was not so efficacious. In all cases, aperients, every three or four days, of castor oil and laudanum, with or without oil of turpentine, or rhubarb, were of decided use; and even in chronic cases the patients were always temporarily relieved by purgatives, and loudly called for them. When there was much blood in the stools, oil of turpentine, in doses of twenty drops, three times a day, was given with advantage. Turpentine stupes were also soothing.

“When the dysentery was not checked in its early stage, it assumed a chronic form. There were frequent stools, with tenesmus, watery evacuations, occasionally tinged with blood; little abdominal pain, but gradually increasing debility and exhaustion, with remarkable tendency to emaciation; pallor of lips and countenance; altered, whispering, whining voice; uncontrollable evacuations; weak but not rapid pulse; and a feeling of inward sinking of a most distressing character. In most of these

cases the appetite was good, and the tongue clean. Few were rapidly fatal; the patient seemed to die by inches, becoming feebler and looking thinner and more wretched day after day; and this I have observed even when the diarrhœa was checked or completely removed. In all these cases I remarked that the patients seemed to give themselves up; they said, day after day, that they knew they were dying, but were quite resigned to their fate, and most grateful for the attention shown them. In those chronic cases of dysentery supervening on fever, mercury did not answer; I have given it in all doses, and in all combinations, without ever experiencing permanent benefit from its use. It is extremely difficult to salivate such patients, but I have done so without any advantage. Astringents are more useful; as, acetate of lead, from two to three grains, three times a day, with one, two, or three grains of opium. I do not think that large doses of acetate of lead are as effectual as moderate ones. No matter what astringent was used, I found occasional aperients most useful in abating pain and procuring rest. Toasted rhubarb, and castor oil and laudanum, were the aperients I usually employed. In many cases I observed that after the complete removal of all the pressing symptoms, when the diarrhœa and pain were completely removed, and the stools natural, and the appetite good, yet the patients sank from day to day. There was no complaint of pain, no want of rest or of appetite for food, the pulse was natural, the tongue clean, and the patient expressed himself comfortable and well, but he could not leave the bed; he took his nourishment greedily, yet he became obviously weaker from day to day. There was no reaction, the face became paler, the limbs and face more and more attenuated from day to day, the voice weaker, and this notwithstanding the use of as nourishing a diet as prudence would sanction.

“After a longer or shorter interval of time, from one to three weeks, during which the patients became living skeletons, uncontrollable diarrhœa returned, and quickly carried them off. In many of the cases of dysentery which recovered,

I found large doses of opium, alternated with aperients, of great service. I have given with advantage five or six grains of opium three times a day, without producing even an approach to narcotism. In children I found great benefit from the use of small quantities of wine after the diarrhœa was checked, and often, even when the remedies failed in removing the bowel complaint, the patient rallied and recovered on the exclusive use of wine, without any medicine whatever. Acetate of lead, and minute doses of opium, were of great use in the dysentery of early life.

“Galls in powder, one scruple three times a day, occasionally succeeded. Pomegranate bark too was sometimes useful, and I saw several cases in which cinchona bark burned to a powder, and given in tea or table-spoonful doses, with wine or whiskey, acted powerfully as an astringent; but in most of those cases the diarrhœa returned. I have tried chloride of lime in many cases of dysentery, both internally and in injections as recommended by Dr. Reid, in the Essay already referred to; but although in several instances it had a most beneficial effect for a day or two, the disease invariably returned. I never saw them of use except in correcting the abominable fœtor which emanated from such patients' bodies and evacuations. In very many instances the removal or subsidence of the dysentery was followed by anasarca and ascites; here I found tartrate of iron, a scruple three times a day, and a combination of acetum scillæ, spirit of nitrous ether, and compound tincture of cardamoms, of use. I have employed with advantage in such cases, the decoction of *pyrola umbellata*, and also tar water, half a tumblerful three times a day. *Digitalis*, although a diuretic much employed in dropsical cases where the vital powers are below par, I found not to agree; it caused nausea and a tendency to sinking. In some few cases I found a strong decoction of *uva ursi*(a) of use. In

(a) [The *uva ursi*, the trailing *arbutus*, or bear berry, is indigenous to Dr. Lynch's district.—ED.]

several chronic cases of dysentery, after the acute symptoms were subdued by calomel and opium, turpentine stupes, or blisters to the abdomen, I found decided benefit from the use of nitrous acid and laudanum; it cured several cases, and always allayed the tormina and tenesmus. Although patients affected with dysentery called ravenously for animal food, and soup particularly, it always disagreed with them.

“I saw no advantage from opiate injections or suppositories. Nitrate of silver and acetate of lead were fairly tried as injections to allay the tenesmus without benefit.

“The use of wine and of opium, in the vast majority of cases, was only had recourse to in the maculated form of fever; and I do not think that this form of typhus, in the very large number of cases in which I have witnessed it in all classes during the last three years, has materially differed in its course or requisite treatment from the ordinary typhus fever of Ireland. I may, however, observe, that, as regards the administration of wine or stimulants in maculated typhus, I think their use is begun generally too early, and in too large quantities. As regards the use of tartar emetic and opium in the advanced stages of typhus fever, and under the circumstances described by Dr. Graves, I must say that I have never used the combination in hospital practice, but I have employed it several times in private, and seen it used much oftener in the practice of others; and the impression on my mind from what I have observed is, that practitioners will be disappointed if they expect to rescue their patients by such a combination. I have seen uncontrollable vomiting and fatal coma in several cases almost immediately follow its use. Very likely, however, had Dr. Graves seen these, his experienced eye would have seen good cause for not trying the preparations in these cases, or of so proportioning the ingredients as to produce the desired effect. I have, however, repeatedly given opium with advantage by itself in cases similar to those described by Dr. Graves; but still more frequently I have seen such cases end well without any medi-

cine, but by the moderate use of wine and nourishment. I may mention, that in some of the most remarkable instances in which I found the use of laudanum beneficial, the pupil was strongly contracted; and it is of importance, as I have often seen, to recollect that when laudanum is given in such cases the first dose should be small—not more than ten drops—and the second not so much, however often it may be repeated. I have seldom seen any sudden benefit from the use of opium in appropriate cases in the advanced stages of typhus, but after a few doses some little tranquillizing effect will be produced, and at last sleep will follow, but so uneasy and so unlike tranquil repose as often to create a suspicion of its being coma and not sleep.”

[The great length to which this Report has already advanced,—much greater than what we originally contemplated,—compels us to extend it to another Number of the Journal. Our next will contain the section on Leinster, an Appendix on the province of Munster^(a), and, if possible, the General Summary. As it is intended to be a permanent record of the late disastrous epidemic, as well as an epitome of medical opinion in Ireland on the subject of fever, we offer no apology for concluding here for the present, in order to give place to original matter of more immediate or pressing importance. We have in the present Number already greatly exceeded the limits usually allotted to Original Communications, but, at the same time, we feel that no excuse is necessary for trespassing still further on the review department, by inserting the following important letter from Dr. G. H. De Mussy.]

(a) The reports of Drs. Callanan and Popham of Cork, and Dr. Cronin of Cove, are already in type.

ART. XI.—*The History of the Cases of Poisoning by Lead which lately occurred at Claremont, with Observations; in a Letter to W. R. Wilde, M. R. I. A.* By DR. H. GUENEAU DE MUSSY, Physician to the Hospitals of Paris, and to the College of Louis le Grand, &c.(a)

Claremont, March, 1849.

MY DEAR FRIEND,—The events I am going to relate to you would, in the middle ages, have been ascribed to some mysterious influence, or to supernatural persecution. Science now enlightens us on the true cause of the evil, but at the same time imposes upon us the obligation to employ all the resources it gives us to combat the danger, which belongs to a class that human prudence can avoid.

Whilst I was endeavouring to allay the sufferings of my patients here, with whose cases report must have made you somewhat acquainted, I heard that in this neighbourhood, and in different parts of England, the use of water kept in leaden cisterns or running through leaden pipes, had produced similar or even more terrible and more obstinate effects than those which my patients complained of.

I read in the *Medical Times* of the 30th December, 1848, a case similar to those which I am going to describe; and Dr. Thompson, of Stratford-upon-Avon, gave an example which ought to be imitated, in calling public attention to similar facts which he had witnessed. In the hope of being useful to the profession and the public, I send, for publication in your periodical, the true relation of what came under my own observation.

I was summoned to Claremont in the beginning of October, 1848; and on my arrival was immediately shown into the room of one of the members of the family, who had been residing there since the preceding March. I found him lying down,

(a) Translated from the French by E. Le Clerc, M. D.

with an anxious countenance, the conjunctivæ of a yellowish colour, and the flesh flabby, evidently proving a loss of substance. He told me he had been suffering for several days from violent colic, which had been relieved, after a constipation of two days, by abundant alvine evacuations produced by a purgative draught.

This was the third attack of the same nature during the space of five weeks. Some time before, towards the end of July, he had been suffering from colic, with nausea, frequent eructations, and irregularity of bowels. Having been for some years past subject to intestinal derangements, he was not astonished at these symptoms; and having had jaundice several times, he did not mind the icteric colour of the conjunctivæ; but he acknowledged that these three last attacks of colic were more severe than the previous ones. Formerly the pain was experienced around the umbilicus; lately it was more towards the epigastric and hypochondriac regions. At first, deceived by the icterus and these subcostal pains, more violent on the right than on the left side, I thought it was the termination of an hepatic colic. To more violent pains had succeeded a general soreness of the abdomen; the appetite was coming back, and he had a quiet pulse.

Struck with the peculiarity of this attack, I prepared myself to watch carefully for any fresh indications of disease. At this time I learned that a brother of my patient had experienced the same symptoms; but no one was astonished at it, as it was supposed he was suffering under a liver complaint contracted on the western coast of Africa. The icteric colour of the conjunctivæ had caused him to believe it to be the re-appearance of his former enemy. He was not, however, complaining then, and was following a line of treatment calculated to subdue his old antagonist. I should tell you that Vichy water had been prescribed for him, and he had been accustomed to drink some of it at table.

A third patient, of forty-eight years of age, who was also

subject to constipation, had violent colic a few days before, attended with nausea, and even vomiting; and it was with great difficulty, and after many fruitless efforts, that he succeeded in passing a few particles of fæcal matter, by the use of lavements; but he attributed all these symptoms to a change of climate bringing back his former indisposition under a more severe form, of which, however, he hoped soon to be freed through a course of treatment consisting of tisans and emollients. He was not suffering much when I arrived, having been completely freed from his abdominal pains. I must confess, even to my shame, that it did not occur to me to bring these three cases together, and to ascribe their similar symptoms to a single cause. I remained with my patients for about a week, flattering myself that they would have a speedy recovery.

A few days elapsed, and no bad symptoms disturbed our security. My patients had resumed their usual occupations, had good appetites and pretty fair digestion, but were still very weak; and pale, sallow complexions had replaced the icteric colour. My delusions did not last long. About ten days after, a new access of symptoms began, with a painful sensation of constriction about the epigastric region, anxiety, nausea, and eructations. In a few hours after, the patients felt as if the intestines were lacerated with two arrows drawn in contrary directions, and piercing the hypochondriac and the iliac regions; the face became altered, the skin got cold, and the pulse was small and frequent. Constipation, at first conquered by injections, now became more obstinate. The injections, formerly retained in the bowel only in part, were now retained entirely; the gases and liquids accumulated in the intestines produced, under the pressure of the hand, a loud *gargouillement*, which could be heard at some distance; a sensation of fulness, and a pressing desire of going to stool, induced efforts without result; the sphincter ani remained contracted, and gave exit neither to gases nor liquids, thus offering an invincible resistance to the strong contraction of the abdominal muscles.

In one of the cases (and this I beg you to remark particularly, as it is very uncommon), the sphincter vesicæ did not permit the urine to pass for more than thirty-six hours, so much so that the bladder extended up to the umbilicus; in the same patient the whole of the genito-urinary apparatus was especially affected. At times the testes were retracted up the inguinal canal, and occasioned most excruciating pains in the back, loins, scrotum, and perineum. Painful as these sufferings were to witness, those of the nervous system generally were more frightful. The patients were in a state of nervous irritability, difficult to describe. In their beds they were restless and unable to find an easy position, and after many useless efforts they fell back exhausted and worn out with pain; the respiration became hurried; the heart's action was painful and violent; groans and sighs were uttered with vehemence, whilst abundant tears ran from the eyes: symptoms greatly resembling those of severe hysteria. These tears, sighs, and groans, were not occasioned by the violence of the pains, and often coincided with the abatement of the suffering. The powers of the system were remarkably supported during the paroxysms of anguish, while the cessation of suffering was accompanied by a corresponding prostration of nervous energy. In the meantime the surface of the body was affected with an excessive hyperæsthesia, so much so that it was oftentimes impossible to touch even slightly the skin of the chest, abdomen, back, face, and superior or inferior extremities, without forcing tears and cries from the sufferers. This hyperæsthesia was only superficial, and was much more excited by a slight touch than by hard pressure; thus if, instead of touching the abdomen with the end of my finger, I applied firmly my open hand, far from increasing the pain, it lessened it. This increased sensibility of the cutaneous system was neither constant nor general; it was excited sometimes in one part of the body, sometimes in another; at times it would become less, and now and then entirely disappeared, to re-appear soon after without

any ascertainable cause. To a superficial examiner it would have appeared to be confined to, or at least more marked over the osseous projections. I observed it for the first time along the spinous apophysis of the dorsal vertebræ. It is, as you know, the acknowledged symptom of myelitis, or spinal meningitis; but I may observe, *en passant*, that I never remarked it in these two last diseases. But I have often observed that this extreme *local* sensibility was only apparent, and that it actually and truly existed only where the hyperæsthesia was *general*. Thus it was with the patients at Claremont: after having touched the spinal region, I convinced myself that the same kind of touch on the other parts of the body excited the same kind of pain, which was sensible along the spinal column and the other projecting osseous parts of the body, because the skin over those parts was more constantly pressed between the bones and the bed.

Does not this strange hyperæsthesia justify, in part, the similitude I have already alluded to between some symptoms of hysteria and those of this disease?

As inexplicable in one affection as in the other, it was among the most striking phenomena of the disease I was observing; and in two other patients it was almost the only symptom which indicated the saturnine poisoning. One of these was a female of a nervous and lymphatic constitution, with whom the constipation soon yielded to remedies, but the hyperæsthesia lasted for three days; besides, she experienced severe lancinating superficial pains in several parts of the body, such as in the scalp and the thoracic parietes. The other was a young man of twenty-four years of age, of a good constitution. He never experienced either colic or constipation, but complained during several days of very great pain in the anterior parietes of the thorax, which was greatly increased by the slightest touch, and even by the respiratory motions. It was more severe above the costal cartilages; at the same time, the nervous sensibility was extreme, and accompanied, as in the other patients, with sighs, groans, and

abundant tears. Certainly, if these symptoms had been present in this case only, unaccompanied by any other phenomena of more importance, I never should have attributed them to the disease to which they truly belong.

I urge these details upon you, because I think they will be of use in elucidating the question as to the origin of the nervous derangements in saturnine diseases. Some pretend they are only the effect of the reaction of the colic on the nervous system; others, more correctly, I think, believe them to be the direct effect of the poison on the constitution; and this is, if I do not mistake, the opinion of your illustrious Dr. Graves, in his profound work on Clinical Medicine. It is also, I think, well supported by these present details, to which I could subjoin others. It is not uncommon to see in manufactories of the carbonate of lead,—the classical land of saturnine affections,—the disease begin with paralysis more or less intense. I have myself seen a young man, not many days engaged in one of these manufactories, who was just apprized of the danger of his occupation by an epileptic-like fit. Besides, if we examine with care the nature of the saturnine symptoms, we shall give them all the same origin, *i. e.* a functional derangement of the nervous system, and more particularly of the cerebro-spinal apparatus. I say more particularly, and not exclusively, for some symptoms seem to point out that the ganglionic system is not always free from it. The icteric coloration is one of these; and here I beg you to observe, that I do not confound the jaundice which may accidentally supervene, with the cachectic colour proper to the saturnine affections, and so improperly called “saturnine icterus.” But, independently almost of this specific colour, I have seen at Claremont and elsewhere patients labouring under poisoning by lead subject to a transient icteric complexion; and I have not the slightest doubt, that it is a form of nervous jaundice *par excellence*, and that it is the result of a spasmodic action of the biliary conduits; and that the ganglionic system does not seem to me to be af-

fects in its secretory functions in painter's colic; for constipation is not always present, and when it exists is it not rather a retention of fæcal matter than a suspension of the intestinal secretions?

In the patient who did not pass his urine the bladder was full, but the produce of the renal secretions was kept back by the sphincter vesicæ, and in the same manner as the fæcal matter was kept back in the intestines by the sphincter ani, the spasmodic action of the pylorus in the stomach opposed itself to the passage of its contents, and they were rejected by the mouth. I am therefore of opinion that it is no more philosophical, and more in accordance with sound observation, to ascribe those supposed secondary symptoms to abdominal disease, than to ascribe rheumatismal pericarditis to a metastasis of the articular affection. What may be said is, that in the greatest majority of cases rheumatism affects the pericardium only after having affected some other fibro-serous membranes; so, likewise, saturnine intoxication more commonly affects the rest of the nervous system after having previously attacked the abdominal organs.

Although this dissertation has taken me away from my patients, it does not entirely remain foreign to the subject of their disease, for it led me to the adoption and explanation of the treatment I followed, and which proved to be successful.

The symptoms which appeared in all of them about the same time proved to me that I had to grapple with an enemy common to all, and not with an individual one, as they themselves supposed. I thought then of saturnine poisoning. I examined the gums, and in two cases I found a slate-coloured line well-defined, and in one of these the mucous membrane of the mouth was strewed with spots of the same colour. I then examined the gums of all the inhabitants of the house, and in the greater number the fatal line was more or less present. Doubt was no more permitted; the diagnosis was written in visible characters; and my learned friend, Dr. Rieken, physician to

His Majesty the King of the Belgians, who had just arrived at Claremont, was of the same opinion. We immediately tested the water we had at hand with a solution of sulphuretted hydrogen, but whether the reagent was not good, or that this water was not the same as that used in the palace of Claremont (which is more likely), it did not produce any precipitate.

The next day Sir James Clark having come to inquire after the inhabitants of Claremont, I told him what had happened, together with my suspicions. He kindly took with him to London several samples of the water, and sent them to Professor Hoffman, who detected in them a considerable quantity of lead. It is useless to tell you that immediately after this the pipes that brought the waters to the palace were cut off.

Again our patients began to experience the same kind of sufferings, but much more violent and obstinate than those they had previously to my arrival. The poison had accumulated. Till then, they had been free from those hysteric-like phenomena which I have already described. I first began with the usual orthodox treatment. To counteract the constipation was the first indication. I thought I should succeed with purgatives, combined with opium and belladonna; but I must confess that though I have treated or seen treated hundreds of cases of colica pictonum with these remedies, I seldom met with such resistance to remedies as on this occasion. Moreover, when at last I had surmounted the difficulty, I found the wished-for result of the purgatives worse than useless in its effects. Saline and resinous purgatives, calomel, and castor oil, were either vomited or returned without any result. One of the patients refused to take any medicine, because he was certain to throw it up immediately, with the most severe pains. For *twenty days* he gave back but a very small quantity of the lavements, at times slightly tinged with the faecal colour, but most commonly such as they had been injected. The colicky pains were violent, but yet not so much the subject of complaint as the nervous sensibility and uneasiness of the surface.

In one of the patients, sulphate of magnesia produced several copious evacuations; and, strange to say, he never suffered more severe torture than during the three days which followed the result from which he expected so much good. I then gave up loading the stomach with liquids, and had recourse to small pieces of ice, and croton oil in pills. I gave as much as eight minims in twenty-four hours. It produced at first a painful emission of gases, a part of the injections, and at last copious evacuations of matter, hard and blackish, in which one could easily discover some detritus of the food used several weeks previously. But,—alas!—to my own grief and the despair of my patients, these evacuations were followed by pains, if possible, more violent than ever, as in the case where they succeeded the administration of the sulphate of magnesia.

No febrile symptoms attended upon these cases all through; at times abundant sweats, sometimes spontaneous, at other times produced by dry or soapy frictions, or hot baths, when the patients were able to remain in them, afforded some moments of ease, and a relief which lasted a few hours, and even a few days. But new symptoms soon came on; the patients began to lose strength, their emaciation became extreme, and the skin assumed a well-marked cachectic colour.

At last the most alarming symptom of saturnine poisoning came to increase my fears. One of my patients had several times vertigo and convulsions, and in another the sight became so weak as to make me fear amaurosis.

The ill success I obtained from the purgatives induced me to relinquish them altogether. Remembering Stoll's advice, which I had seen followed with success by my father, at the Hotel Dieu in Paris, I began to use narcotics and sedatives almost exclusively. Opium and belladonna, in doses of one grain each, repeated every four or six hours, with small pieces of ice at first, and afterwards with a weak infusion of rhubarb, succeeded better than all the drastics to calm the nervous system and to overcome the constipation.

A new proof of the nature of the disease ! The stupefaction of the nervous system was necessary to the expulsion of fæcal matter. I will go farther, and say that the success which is generally obtained by purgatives, at the beginning of saturnine diseases, when colics are the most predominant symptoms, is due as much to the perturbative action of these medications, as to their special and primitive action on the digestive canal.

During this accidental epidemic several of the inhabitants of the palace began to experience the first symptoms of the disease, while I was there ; in one of them especially, in whom it began with violent colic, I used at once purgatives with energy, and the spasm yielded readily and completely. A strong purgation overcame at the same time the spasm and constipation. But with the three patients who had engrossed my attention more particularly, I had to contend with a poisoning of long standing, and its inveterate effects. I could not make any impression on the nervous system by indirect treatment, I was obliged to attack it directly with antispasmodics, which alone succeeded.

This success did not satisfy me. It was clear that if with the narcotics I had succeeded in overcoming the pathological effects of the poison, they were useless against the poison itself. I could not hope for a perfect cure unless I could expel the lead from the system, or render it harmless. In a word, I had yet the chemical treatment to administer. My patients were not suffering any pain, but they still had the cachectic complexion, the breath was fetid, and they had not regained strength ; they were as thin as phthisical patients in an advanced stage ; the skin and mucous membrane had lost their natural colour ; a *bruit de soufflet anémique* could be heard over the blood-vessels of the neck ; and the extensors of the hands were beginning to be paralysed.

Notwithstanding the difference of opinion of chemists and physicians, I resolved to employ sulphur in association with

chalybeate preparations. I prescribed a syrup of sulphuretted hydrated iron, in connexion with sulphurous baths, for which latter purpose a zinc vessel was constructed. These sulphurous baths were taken every second day; on the intermediate days, soapy baths were resorted to. Only two patients followed this treatment, the third having gone to the Continent, where he had several fits of colic and a long convalescence. He afterwards had recourse to sulphurous baths, and recovered completely.

The chemical action showed itself almost immediately by the black discoloration of the nails of the feet and hands, and by the appearance of similar spots on different parts of the skin. One of the patients came out from the second bath with the abdomen entirely black. The soapy frictions and baths usually washed away the spots from the skin, but not those of the nails. The appearance of this reaction,—which is very common with men working in lead manufactures when using sulphurous baths,—is explained by the combination of the sulphur with the saturnine molecules adhering to the skin. In these cases it was evident that the lead was brought to the surface of the body by means either of the sudaminal or follicular exhalation, and perhaps by both. The metal is eliminated and transformed into sulphuret of lead by the sulphurous baths, and then taken off by the soapy frictions and baths. These were not useless, for without them the lead deposited on the surface might have been carried again, by absorption, into the economy.

But the skin was not the only means of giving exit to the poisons, I discovered it in the urine, by a solution of hydrosulphate of ammonia.

You know, my dear friend, that some physicians and chemists look on sulphur as the only efficacious remedy: others, on the contrary, assert that it is without any effect. What I can tell you is, that the success was beyond my hopes. After two or three weeks I had the satisfaction of seeing my patients

progressing rapidly and surely towards recovery. This happy result induced me to try the same means with another person, older, and of a weaker constitution, and, consequently, for whom I was most uneasy, and the results were as satisfactory.

At the beginning of November last the small colony of Claremont went to reside at Richmond; it was in this last place that the acute symptoms quite disappeared, and that I began the sulphurous treatment under which my patients recovered that state of good health which the fatigue and anxieties of the camp and of the sea had impaired a long time before the saturnine poisoning.

It was only when the recovery was so much advanced that I became acquainted with the labours of Messrs. Milsens and Dumas, on the successful results of iodide of potassium, used in cases of poisoning by lead. I did not employ it, but I recollect having seen it used in such cases as a restorative with patients reduced to the last degree of saturnine cachexy, without any satisfactory result. Perhaps it had been used too late. *A priori*, I think we may mistrust a remedy which acts only in dissolving the poison, and rendering it more easy of absorption, whilst it makes it more susceptible of elimination. It is, however, proper to submit it to the consideration of the profession. If iodide of potassium has the virtues that are ascribed to it, I think it would be of great advantage to use the waters of Ham-bach or Schwollen, which contain a certain proportion of this salt united to some iron, and other alkaline salts, and which, besides, have an acknowledged efficacy in dyspepsia.

The poison did not act on all the patients at Claremont with the same rapidity and intensity, and you will not be astonished at it; for you know that the same morbid cause has not always the same effect upon those who are exposed to it. As for the lead, we see many workmen handling it for several years with impunity, whilst others experience the bad effects of it at the very beginning. It is thus that some patients have suffered from a saturnine affection after the use of a few grains of ace-

tate of lead, or even by a few vaginal injections, whilst more commonly patients do not suffer by this remedy at all.

One of my patients, as I told you before, was accustomed to drink Vichy water at table. This was a very unfortunate predisposing circumstance: it is probable that the salt of Vichy water, i. e., bicarbonate of soda, united to the lead of Claremont water, had much to do with the violence of the attack under which he suffered.

At the time of my arrival at Claremont there were thirty-eight inhabitants. Thirteen of these have been attacked, eleven men, and two women. Four of them had some symptoms two months previously to my arrival; the other cases occurred under my own eyes. Some, even after the pipes had been cut off, were affected, and one when on the Continent, a week after leaving England. Six children in the household, aged from three to seven years, have been exempt from it. Only half of the patients have had the gums marked with the slate-coloured line, and spots of the same colour on the mucous membrane of the mouth; and these spots, and the bluish line of the gums, were observed on several others who did not experience or exhibit anything else: and those signs of the poison having been taken into the economy have not yet disappeared. The morbid cause has acted in these cases, as it often does, with caprice, and according to individual dispositions which defy every reasoning. The malady has shown no respect for condition, and attacked indiscriminately servants, aides-de-camp, and princes, and did not spare even the most august and pious of victims.

Such, my dear friend, is the pathological part of my relation; but I have still a few details to give you on the "*Prima mali labes*," viz., on the conditions under which the disease originated, i. e., the introduction of the poison into the waters.

The spring that furnishes the palace of Claremont with water issues from a sand bed at about two miles distance. It

was chosen for its uncommon purity from among a great many others in its vicinity, and the water was, thirty years ago, conducted to the palace through leaden pipes. In the present day some other metal would, perhaps, have been selected, for experience has taught us that pure water, and especially distilled water, acts rapidly on lead when it comes in contact with it.

Thus Tronchin proved that the inhabitants of Amsterdam were indebted to the rain water, kept in leaden cisterns, for the colic they were so much subject to in his time. The purity of the Claremont water becomes a most dangerous property, and not only to it but to other springs. Whilst I was combating its pernicious effects, I heard that there had been several similar cases in different parts of England; they are not uncommon in the county of Surrey, and especially in the neighbourhood of Claremont. Besides the cases published by Dr. Thompson, I know of several others at Weybridge, Windsor, and in different other places.

The water of the palace of Claremont had been for many years employed by its inhabitants without any bad result; how was it then that this water, till now harmless, had become suddenly a violent poison? This is what has puzzled me and everybody else; and although I looked for its cause with the greatest attention, I could discover only a single alteration, apparently of little importance, lately made in the transmission of the water.

Until about eleven months ago, leaden pipes used to take up the water from a large natural cistern near its source. When the present occupants of the palace came to live in it, they wished to preserve this natural cistern from the vegetable and animal detritus that usually fell in it. For this purpose an iron cylinder of six feet diameter and twenty feet high was constructed, and was sunk into the ground fifteen feet deep. The water swelled up within, and a leaden pipe was attached to it, with a funnel-like mouth projecting by a few inches in the

inside of the cylinder, which was closed at top by an iron cover with several holes in it to allow the air to make the requisite pressure on the surface of the water. You may discover what has been the influence of this change; for myself I think it has been the origin of all the evil. The datum is certain, but I have only hypothesis to offer as to the chemical reaction of the water. Mr. R. Philipps, so well known for the accuracy of his researches, has, however, analysed the water of the spring, and has only found in a gallon of it 5·7 grains of solid and saline matter, consisting of

	Grains.
Common salt, ...	2·7
Sulphate of lime, silica, oxide of iron, and vegetable matter, ...	3·0
	5·7

That is to say, a proportion of salts, and especially of sulphates, too small to prevent the formation of hydro-carbonate of lead, for experiments have proved that $\frac{1}{4000}$ of sulphate is necessary to prevent the development of the deleterious salts.

As for the part acted in this case by the iron cylinder, I must look for it; first,—in the galvanic action resulting from the contact of the two metals with the water. I have, however, some hesitation in admitting this supposition, for it seems to me that the water contained in the cylinder should be charged with more lead than that which ran through the pipes, and remained for some time in the leaden cistern of the palace; and yet the water of the iron cylinder did not contain any lead: that of the pipes contained some, and that of the cistern contained much more of it. Secondly,—in the action of the iron on the water, and on the salts which it contained; and thirdly,—in the very purification of the water, caused by the enclosure of it in the iron cylinder, and the filtration which it underwent to get into it. We may understand this better at some future day.

For the present, my dear friend, I hope I have said enough to impress upon my readers the danger of using water that has been in contact with lead, a danger *increased in proportion to its purity*; and to point out the bad effects that are likely to arise from transmitting water alternately through lead and iron conduits.

If to arrive at those results my narration has been too long, I hope you will excuse it in favour of its good intentions.

Truly your's,

H. GUENEAU DE MUSSY.

P. S.—I should inform you that Professor Hoffman has ascertained the quantity of metallic lead contained in the water examined by him. He has found that it amounted to a grain per gallon, an enormous quantity, when we consider that the poisoned water was used in all culinary and table purposes, and, previously to the discovery of its deleterious character, even in the preparation of tisans and lavements.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Clinical Lectures on the Practice of Medicine. By ROBERT J. GRAVES, M. D., &c. Second Edition. Edited by J. MOORE NELIGAN, M. D., &c. Dublin, Fannin and Co. 1848. 8vo. 2 vols. pp. 586 and 570.

DURING the past year the press has literally teemed with medical publications. Works of all sorts and sizes; thin octavos, fat duodecimos, pamphlets, and ephemeral productions without end, have issued from the Paternoster-rows and Fleet-streets of literary or scientific celebrity. Amidst this avalanche it is refreshing to meet occasionally with a work, the matured labour of an experienced practical physician, stamped with the approval of the medical public, as evidenced by the demand for a second edition, and improved, corrected, revised, and edited by a gentleman who, to his other acquirements of a practical and scientific character, has himself earned literary reputation of no mean account. Of such a nature, and appearing under such circumstances, is the work which heads this notice. It is not our usual practice to review at length second editions, especially when the merits of the first issue had been previously canvassed in full in our pages; nor would we now deviate from this custom, were it not that the work before us bears more the semblance of a new publication than of a new edition.

In the twenty-third volume of the former Series of this Journal, Dr. Graves's "System of Clinical Medicine" was noticed, its contents enumerated, and the author's opinions freely commented on. On the present occasion we would rather investigate the new material—the alterations and additions—than refer to those portions already well known to, and duly appreciated by every student in medicine. There is, however, one

subject noticed in the previous review to which we think it necessary again to refer, a topic ever fruitful, ever interesting, and particularly valuable to the Irish practitioner; we allude to our endemic fever. In the first volume of the present edition we find, among the new matter, a lecture on the late epidemic and its causation throughout the country generally.

“A vast amount of mischief,” says Dr. Graves, “was produced by the attempt made to connect fever epidemics with a deficiency of food; and the great diffusion, the rapid spread, and the unusual mortality which characterized the fever of 1847, must be, to a great extent, ascribed to the prominence which from the very first was given to famine, as an exciting cause of typhus fever in Ireland. The text put forth so authoritatively, ‘if there be, no famine, there will be no fever,’ prevented proper attention from being paid to the real causes which produce and promote the spread of epidemic diseases; and the means adopted to supply a deficiency of food were, as I shall now show, singularly productive of those causes.

“Want of a sufficiency, or food of an unwholesome or improper character, predisposes the human frame to disease by its debilitating effects on the system, and thus individuals become more susceptible to the contagious influence of epidemics when they exist; but I cannot admit that either cause is sufficient to generate an epidemic. Over-crowding, deficient ventilation, and filth, are causes which in themselves give rise to epidemic diseases; and when to these are added the debilitating effects of famine, we have a combination of circumstances extraordinarily calculated to promote the diffusion of a contagious disease previously in existence, and as I have already said, typhus fever is always endemic in Ireland.

“Owing to the failure of the potato crop and other concomitant circumstances, there was great want of food in this country in 1845 and 1846. In the former year there was no remarkable increase in the number of cases of typhus fever which are at all times to be met with in Ireland, and active measures were taken to provide the people with employment and a sufficiency of food. The measures adopted had the effect of congregating together large masses in the open air in a cold wet season, and of over-crowding the poor-houses and hospitals throughout the whole country to a most frightful extent.”

The author here quotes Dr. Lalor’s graphic description of the epidemic, as it appeared at Kilkenny, from that gentleman’s communication in our fifth volume. In illustration of his position he adduces the fact that,

“The congregating or crowding together of people, either in the open air or in buildings, has been at all times productive of disease. Thus in the year 1812, in the province of Gujerat, West Hindostan, the people crowded into the towns in consequence of the great des-

titution which prevailed, when an epidemic broke out amongst them which nearly decimated the people; but the epidemic was of small-pox, and not fever. But never, perhaps, in the history of the world, was such a fearful commentary on the effects of the *entassement* of individuals witnessed, as in Ireland, during the year 1847. The newspapers and periodicals of the day teemed with illustrations of the fact, *that the Irish epidemic of 1847 had its origin in the congregating together large masses of people at public works and at depots for the distribution of food, and in the overcrowding the workhouses.* I shall now proceed to bring before you some of these illustrations."

He next gives us an analysis of the Poor Law Commissioners' Report, from which some fearfully interesting particulars respecting the progress of disease and mortality in Ireland are brought to light. From this it appears that, while the deaths in our union workhouses amounted to but 159 for the week ending 3rd April, 1846, the number who died in the same localities, during the analagous period in 1847, was as high as 5,706:

"A more fearful fact still is the large increase of sickness, and the large proportion of fever. The number of inmates had a little more than doubled, the numbers being, on the 4th of April, 1846, 50,861; and on the 3rd April, 1847, 106,888; but the numbers in the hospitals increased from 8,121 to 28,239, while the numbers in the fever hospitals increased from 864 to the fearful number of 8,931. The most alarming fact disclosed by these returns is the rate of mortality which existed, and its rapid increase from the previous November. In April, 1846, the weekly rate of mortality was 3 in every 1000 inmates. In November it showed a decided tendency to rise. During the four weeks of December it ran up from 7·4, to 8·6, then to 10·3, and then to 11. In January, 1847, it was 12·2 the first week, 13·3 the last. In February it was 17 the first week, 19·5 the last. In March it ranged from 22 to 20, and in April it rose to 25: twenty-five out of every thousand died in the last week for which there is a return."

The following extract from a letter of Dr. Dillon's, of Castlebar, county Mayo, to the author, is also highly descriptive of the state of the sick poor under the present system of relief:

"The Poor-Law Commissioners have given sad proof of their ignorance of medical police, and total incompetency to direct or be connected with the sanitary state of the country. Wherever their houses were in full operation, there existed disease, and *only there*. We would not open our doors and congregate poverty and filth, when we had not funds to meet its expense; we were, therefore, dismissed and held up to odium; but, thank God, we have spared human life by our decision, and have kept this locality more free from disease than any other union in the kingdom, where the Poor-Law was

in full operation: at the same time, we fed our poor by private subscriptions, and lost fewer from want of food than any other place."

And were further proof necessary to show the deleterious effects of over-crowding, we need but refer our readers to the Fever Report now in course of publication in this Journal, and direct their particular attention to Dr. Crumpe's description of the frightful state of the gaol of Tralee, given in our last Number.

The principles of Dr. Graves's practice, and the improvements which he has introduced in the treatment of fever, are now too well known to require description, and too generally acted on to demand support; therefore, with one or two more remarks, we may dismiss this portion of the work. On the subject of bleeding in fever, he believes that venesection may, when "properly employed under favourable circumstances, and very soon after seizure," succeed in cutting short the disease; but at the same time he acknowledges that such cases are rarely seen by the practitioner, either in hospital or in the private walks of the profession:

"Moreover, in entering on the treatment of any case of fever, you should bear in mind the nature of the prevailing epidemic, and be careful how you proceed with respect to bleeding; and if you take away blood, do not go so far as you would if treating a case of fever under different circumstances, and of a genuine inflammatory character. I know that many persons have asserted that you can bleed in all cases of fever, no matter what the state of debility may be; because this, they say, is only apparent, and depends upon congestion and oppression of vascular action. I do not know how far this doctrine may be applicable to former epidemics, but in the recent epidemics of fever we have had it certainly does not hold good; and no man in his senses would think of adopting it as a guide for his practice. I have seen some of the most intense, dangerous, and protracted cases of fever commence without any appreciable increase of vascular action, with a soft, slow pulse, a cool skin, no appearance of congestion of any internal organ; in fact, without any symptom which would, even in the youngest and most robust habits, call for the use of the lancet."

On the subject of bleeding in fever we would again refer our readers to our Fever Report already alluded to. From it they will learn that the pernicious practice of a general and almost indiscriminate resort to the lancet in the treatment of all forms of fever, which some years ago existed, is daily falling into disuse.

To recommend, in general terms, a work which has now become a standard authority in medicine in this country, might

seem superfluous; but we cannot too frequently, nor in words too impressive, turn the attention of the Irish practitioner to the opinions and practical experience of this accurate observer, great clinical teacher, and most graphic writer, on the subject of the plague of this country.

Dr. Graves's various improvements in the treatment of fever are moreover too well known and established to be discussed in a review; but before we take leave of this subject we would briefly allude to another topic, as set forth in the nineteenth lecture, a very important one in the management of nearly all our epidemics,—the administration of wine and the phenomena of the heart's action as an index thereto. The readers of our former Series are, no doubt, acquainted with Dr. Stokes's valuable observations on this subject, published in our fifteenth volume. Dr. Graves quotes these at length, but while he agrees in their immense importance in a practical point of view, he still retains his former opinion as to the *cause* of the diminution of the heart's action in typhus fever, believing it to be "affected with debility from the same cause which induces a debility of the voluntary muscles and of the bladder and sphincter ani: that cause is a general prostration of nervous energy." The softening, which is undoubtedly present in the *post mortem* examination of some cases where full action existed during life, he conceives, may be owing to the effect of putrescence, "a process which, it is well known, sets in with great rapidity in cases where death has been caused by any malignant disease." Without entering into the arguments advanced on either side, we must confess we do not think it likely so astute and practised a pathologist as Dr. Stokes would be apt to mistake a *post mortem* appearance for a pathological condition which existed during life, and certainly the amount of softening—"the weight of the finger" alone being almost sufficient to penetrate the muscular structure of the heart—appears to have been greater in those cases dissected by Dr. Stokes, than we meet with even in subjects in the most advanced state of putrefaction. And why should the heart alone assume this sudden putrescence? why not the liver or the spleen, the textures of which organs are naturally so much more friable? To the practical physician, however, this question is of comparatively little moment. The author has not only fairly but fully stated the views of his colleague, and adds:

"But the fact cannot be denied, that in many cases of typhus the heart becomes weak, that this weakness is manifested by a decrease in the strength of its impulse, or in the intensity of its sounds, or a change in their relative loudness and duration; and though I

have never witnessed these changes without accompanying debility of the entire muscular system, and other evidences of prostration, yet I fully agree with Dr. Stokes, *'that in the diminished impulse, and in the feebleness or extinction of the first sound, we have a new, direct, and important indication for the use of wine in typhus fever,'* and one from which the junior practitioner in particular will derive the greatest assistance."

Among the many subjects of interest added to the present edition is a chapter on sleeplessness in disease, as in jaundice, dyspepsia, the various forms of delirium, among hypochondriacs as a result of the irritation from blisters, as well as owing to grief and mental anxiety, to which we would especially direct attention. The following directions are well worthy of being carefully remembered.

"In cases of sleeplessness, where you have administered an opiate with effect, be careful to follow it up for some time, and do not rest satisfied with having given a momentary check to the current of morbid action. To arrest it completely, you must persevere in the same plan of treatment for a few days, until the tendency to sleep at a fixed hour becomes decidedly established. You must give an opiate the next night and the night after, and so on for five or six nights in succession; and where the watchfulness has been of an obstinate and persistent character, narcotics must be employed for a longer period and in undiminished doses. I do not allude here to the sleeplessness which accompanies confirmed hectic and other incurable diseases; such cases require a particular mode of treatment, and generally call for all the varied resources of medicine. But in those instances of watchfulness, which are frequently observed towards the termination of acute diseases, it is always necessary to repeat the opiate for some time after you have succeeded in giving a check to this symptom. You need not be afraid of giving successive opiates, lest the patient should become accustomed to them, and a bad habit be generated, for the rapid convalescence and renewed health, which are wonderfully promoted by securing a sound and refreshing sleep, will soon enable him to dispense with the use of opiates."

In this country, editions of the works of a living author by a contemporary of his own are extremely rare, although of great frequency in America. There, however, the works are generally those of European authors, and the editor introduces his own opinions, additions, comments, and emendations, either within brackets in the letter-press, or as foot-notes; thus frequently disfiguring the type, and rendering the perusal exceedingly tiresome and inconvenient to the reader. Dr. Neligan, the accomplished editor of this second edition of Graves's Clinical Medicine, and already so well known to science and litera-

ture(a), has, however, avoided this error; he has altered the classification, revised and re-arranged the whole, introducing several of the author's essays, which were omitted in the first edition, and he has added to the practical character of the work by rendering it much more easy of reference. Whatever additions or alterations he introduced have been incorporated with the text; but in this, he says, he has been differently circumstanced from most other editors, having had all through the zealous co-operation and approval of the author. To all concerned in the publication of this great work we think the profession are under a debt of obligation:—to the distinguished and gifted author, the originator of true clinical instruction in this city, and the man who first raised to eminence, *both at home and abroad*, the school of practical medicine in Dublin, of which the lectures and communications now collected into these volumes were the first fruits; to the editor, to whose zeal and practical professional as well as literary experience the present admirably arranged and critically revised work is due; and to the spirited publishers who have brought out the book so creditably in all its departments.

Clinical Observations on the Pathology and Treatment of continued Fever, from Cases occurring in the Medical Practice of St. Bartholomew's Hospital. By EDWARD LATHAM ORMEROD, M. B., Caius College, Cambridge; Licentiate of the Royal College of Physicians; Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital. London, 1848. 8vo. pp. 244.

WE have perused Dr. Ormerod's work with much attention, and although we are quite willing to allow that its merits are considerable, yet in some respects it is evidently deficient. Being aware of the many advantages he enjoyed, and the great zeal and diligence for which he is so distinguished, we concluded that his *Clinical Observations* would be worthy of St. Bartholomew's Hospital, and of the eminent physicians who superintend the clinique of that institution. These expectations have been but partly fulfilled; and in justice to Dr. Ormerod we shall proceed to state the grounds of our disappointment.

That an author should, in the present day, dwell at such

(a) While we write we have received the third American edition of Dr. Neligan's first edition of "*Medicines and their Uses.*" Three editions of Dr. Graves's first Irish edition have also appeared in America.

length on the question of the contagiousness and essential nature of fever, appears to us as truly surprising, and is scarcely less excusable, whether it be the result of ignorance, or an act of wilful omission.

Had Dr. Ormerod referred to the writings of Cheyne and Barker, he would have felt that there was no necessity for again arguing the point whether fever is or is not contagious; for their classical work has demonstrated the accuracy of the opinions of those who maintained the affirmative side of the question. Had Dr. Ormerod also consulted the many valuable essays published annually by the physicians of Cork-street Hospital in this city, he would have seen that the essential character of fever had been completely elucidated by Whitley Stokes, O'Brien, Grattan, Stoker, Kennedy, and various other well-known Dublin physicians; and consequently, if he chose again to discuss either of these subjects, he should have approached them, not as if he were about to arrive at something fixed concerning a previously unsettled point, but as if he had undertaken the investigation rather for the purpose of medical exercise than in the hope of enlarging the bounds of medical discoveries.

The third chapter of Dr. Ormerod's book is devoted to affections of the brain in fever, a general consideration of the subject, examples of the different forms and symptoms of cerebral affections, and their appropriate treatment. This chapter contains much valuable matter, and the *post mortem* examinations leave no doubt that the opinion entertained by most practitioners in this city is correct, viz., to use Dr. Ormerod's words in speaking of Case III., "that the cerebral symptoms were independent of appreciable organic disease in the brain itself." We are glad to find our own belief thus supported by Dr. Ormerod's researches, for we are conscientiously convinced that the opposite theory, which sought to explain the cerebral symptoms in fever, and, among the rest, delirium, raving, and sleeplessness, by active congestion of the brain, led to most fatal results in practice; and yet this hypothesis was long maintained both in the schools in London, Edinburgh, and Paris, and, as we believe, was first impeached by several distinguished men in this city. The practical result has been that arteriotomy, venesection, and other means supposed to be remedial in cerebral congestion, have become the exception, not the rule, in practice; and consequently patients who labour under delirium are now treated only with soothing, or even stimulating and narcotic remedies, which formerly would have been deemed inadmissible. Strange to say, Dr. Ormerod in this chapter has not

even mentioned the names of Dr. Graves, Dr. Stokes, Dr. Law, Dr. Corrigan, or other Dublin physicians, who have contributed the valuable results of their experience on this point; and he seems quite unaware of the advantages derivable from a judicious combination of tartar emetic and opium in many cases of delirium and sleeplessness which would otherwise prove fatal.

Dr. Ormerod's fourth chapter is devoted to the affections of the lungs in fever, and contains several interesting cases, and many sound and judicious reflections upon the nature and treatment of pneumonic complications in this disease.

The introductory remarks in this chapter are so deserving of attention, that we willingly present them to our readers:—

“The complications of fever differ much in kind and degree, both in different epidemics, as already seen, and also according to the difference of the season; but the organs contained in the three great cavities of the body are not affected in exactly the same manner, respectively, by these varying conditions. Affection of the brain seems almost exclusively connected with the essential nature of the epidemic; while affection of the lungs appears to depend, in as great a degree, on the season of the year and external temperature: and both the season and the nature of the epidemic stand in close relation to the frequency and severity of affection of the bowels. Thus, from the present instance in the fever of 1846, most of the cases of pneumonia occurred during the early part of the year; then, during the summer, this complication was lost for a while, re-appearing, with less severity, however, in the colder season of Autumn.

“Pneumonia is the term employed to express the nature of the affection of the lungs in the following cases narrated in this chapter, a name which, considering the accurate information possessed concerning the signs and morbid appearances of this disease in its simple form, it might seem reprehensible to employ here in so loose a signification as a reference to the details of the dissections in the fatal cases (x., xii.) displays. Yet it would be representing cases far otherwise than as they are witnessed, to attempt any more accurate nomenclature, and to dwell separately on bronchitis and pneumonia, when, probably, after all, the pulmonary affection in fever is something intermediate between the two, not exactly referable to either. In a tabular analysis of cases, where the nice distinctions of one disease shading into another are lost, and the disease must be called by one or other name, the difficulty of the diagnosis disappears. The conclusions from numbers are incontrovertible; it is, therefore, the more necessary, even at the risk of prolixity, or being thought needlessly to increase the obscurity of the subject, to set forth as fully as may be all the fallacies which may lurk behind any numerical inferences, by an examination of the elements which these numbers represent.

“As to the symptoms during life, bronchitis may appear under

two conditions, either just preceding death, and scarcely distinguishable from the trachæal rattle, or at any period as a trivial affection. A little more severe, and, as the case becomes otherwise of importance, the disease runs on into something undistinguishable from pneumonia.

“But this, as far as we can learn, may not be pneumonia, for here are causes in operation tending to vitiate the conclusions from all the means of diagnosis at command: first, the tendency of bronchitis in fever always to affect the smallest tubes, thus obscuring the results of auscultation; and next, that of the blood to gravitate to the posterior part of the lungs of debilitated patients lying on their backs, thus vitiating the inferences from any dulness discovered about the base of the lungs by percussion; add to this, the difficulty of fairly observing these signs, such as they may be, in the low forms of fever, and there is an end of all accuracy of diagnosis from the symptoms, were even the morbid appearances, whereby these shortcomings might be made good, most accurately distinguishable. But the case is far otherwise, for who shall say, even in the subject of ordinary disease, where simple congestion from gravitation, or other causes, ends, and where pneumonia begins. And yet, close around this indefinable line it is that the changes in the lungs, during fever, lie. And when softening, with œdema and staining of the tissues, have to be allowed for, as well as the fugitive nature of all the changes arising from bronchitis, we shall not be found to have overrated the difficulties of an accurate discrimination, either during life or after death from fever, between bronchitis, pneumonia, and simple congestion from gravitation(*a*).

“These facts seem to justify the following brief statement, of general, not of universal application, that the pulmonary affections of continued fever are not distinguishable, with certainty and accuracy, in the majority of severe cases during life, nor, involved as they are with the most difficult part of the subject, in an anatomical point of view, after death; but as, at both these periods the signs and changes respectively approach most nearly to those of pneumonia, this term, in a somewhat looser signification, however, than ordinary, seems best applicable to them collectively(*b*).

(*a*) The difficulty of this part of the subject has been fully set forth by Louis (*Fievre Typhoïde*, tom. i. p. 328–336), who notices, first, that the different morbid appearances are not different stages of the same process: the form described under Case x. of this series especially not being explicable, on the supposition of its being a different stage of the change more commonly noticed after death from fever. Next, as to the common change: it differs from ordinary hepatization, and never more striking than where the two co-exist, in colour and texture, and the fluid contained in the substance of the lung is also different; but it does not follow the line of the gravitation of the blood, and is therefore obviously not referable to this alone. The name of splenation is as applicable as any term can be to the morbid changes themselves (which, it must be recollected, are not peculiar to fever), expressive of an analogy in their cause to that of hepatisation, but marking the difference of the results.

(*b*) That bronchitis differing in nothing from the simple form of the dis-

“Were this a question of nomenclature only, it might seem better to have passed the matter entirely over without remark, merely using the general expression of ‘affection of the lungs,’ instead of the more limited one of ‘pneumonia.’ But this would have fallen short of the object in view; for, as far as a name can influence treatment, it is desirable that it should do so here; this affection of the lungs, by whatever name it may be called, is best treated by antiphlogistic measures, and especially by local depletion, so long as their actual employment be not forbidden by the other symptoms. Of the names expressive of such a condition, that which applies most nearly to the severer cases seems preferable; pneumonia, rather than bronchitis, and either than congestion from gravitation, implying, as that does, the commencement of so hopeless a state, when the physical is prevailing over the vital force, and the indications are no longer to treat disease, but to save life. But the mere name should influence the treatment no further, for it is a fact that the pulmonary affections of fever neither require nor are benefited, under ordinary circumstances, by the use of mercury.

“Unlike the other complications of fever, pneumonia would seem to be as much to be dreaded in the relapse as in the first attack, and further, cases of fever, accompanied by pneumonia, or in which the pulmonary complication is most prominent, are particularly liable to relapses. This fact admits of a very obvious explanation, for, in hospital practice, to which these remarks have almost exclusive reference, the causes which may act injuriously on the lungs, such as accidental exposure to cold, the most common cause, are not so easily guarded against as are those which may act injuriously on the brain or the intestines, previously weakened by or predisposed to disease. The immediate cause of the relapse, in such a case, lies less in the fever itself, than in the season of the year, which, first inducing the complications of fever by cold, subsequently produces a relapse of fever by the renewed action of the same cause on an organ now, from having been previously diseased, the less able to resist the influence.”

We regret that we are unable to follow our author further upon this subject; and we can only remark that the cases are detailed with clearness, and their treatment in general seems to be judicious, and as such we recommend them to the attention of practitioners.

ease and fever may co-exist, I have no intention to deny; the present winter (1847-8) supplies abundant proof of this fact; but the bronchitis seems to have no further connexion than that of coincidence with the fever, of which, in its commencement, progress, and termination, it appears wholly independent. Its treatment differs in no respect from that required under ordinary circumstances, only the fever will, probably, contra-indicate any active measures. The patient may die of either disease, for the combination is unfavourable to both; but if he recover from the fever there still remains to cure the bronchitis, which is in this respect like the pure pneumonia occurring during fever, and unlike the mixed pulmonary complication of fever described above.

Dr. Ormerod devotes his fifth and sixth chapters to affections of the bowels in fever, and we are quite willing to admit that upon this subject his reasoning is in general correct. Amongst other cases he details several in which discharge of blood from the bowels took place during the course of fever, and on which he makes in his *resumé* the following observations :

“In four cases, namely the three just detailed, and in Case xxiii., next following, there was more or less abundant discharge of florid blood from the bowels for a limited time, and then it ceased. In three of these cases death followed at an interval of not less than a week, and dissection showed ulceration of the bowels. The fourth got well. Now, without entering fully into the reason of the thing, which could only be discussed after a much more minute examination of the parts adjoining the ulcers than was here instituted, the fact can only be stated. But, leaning on this, it appears that sudden hemorrhage occurring during fever, which there is reason to suppose to arise from ulceration of the bowels, need not cause any great apprehension, beyond the immediate danger of exhaustion, for this appears to have been the cause of death in the two last detailed cases; while in the first, and in Case xxiii., but for the observation of the blood, there was nothing in the symptoms to lead one to suspect even that hemorrhage had taken place. A symptom which should cause much more alarm than the discharge of florid blood from the bowels, is the appearance of black coffee-ground-evacuations, in connexion with its possible causes, as illustrated in Case xxx. The observations of Louis seem entirely to justify this statement. Two marked illustrations of it occurred during the last year, making up, with three cases (xx., xxi., xxii.) here detailed, five of hemorrhage from the bowels.”

But it is not to advocate such notions as that because fever patients may suffer accidents the most alarming, and quite beyond our control, and yet get well, either wholly, or at least from the effects of that particular accident, that these remarks are made :

“Even in this profuse bleeding, which assuredly is one of the most frightful symptoms than can present themselves in fever, there is generally time for treatment. The bleeding will not necessarily recur; it depends probably on ulcerations, and the treatment calculated to check the progress of that ulceration is what is to be followed, rather than any plan calculated merely to check the bleeding. Leeches, blisters, and the gradual action of mild mercurials, combined with opium, are to be thought of rather than direct astringents. This is the great indication. Then, keeping in mind that the hemorrhage may have arisen from active congestion rather than ulceration, and so be rather a salutary action than otherwise,

the subsequent amount of stimulants, and indeed the whole subsequent treatment, must be regulated by the indications of strength given by the pulse. For the case is still one of fever, to be studied day by day, in all its particular symptoms, as much as if no hemorrhage had occurred."

We quite agree with the general indications for cure here pointed out by Dr. Ormerod, but we think that he attaches too little importance to the exhibition of direct astringents, which may in general be administered simultaneously with the remedies he recommends; and may contribute, by checking the hemorrhage, to assist the powers of the system, and enable it to repair the lesions of the bowels, which gave rise to the solutions of continuity in the mucous membrane, from which the bleeding points poured forth the contents of the minute vessels. In practice we have certainly seen great advantages arising from the internal administration of acetate of lead in large doses; and in other cases obvious relief has been afforded by small and oft-repeated doses of oil of turpentine, combined with opium. We must conclude this brief review of Dr. Ormerod's treatise by expressing our conviction that he is a young physician from whose pen we expect at a future period valuable contributions to medical science.

On the Influenza, or Epidemic Catarrhal Fever of 1847-8. By THOMAS BEVILL PEACOCK, M.D., Physician to the Royal Free Hospital. London, Churchill. 1848. 8vo. pp. 184.

A PHYSICIAN can scarcely confer a greater boon on his profession than that of furnishing a faithful account of the peculiar characteristics of any epidemic which he may have had favourable opportunities of witnessing. The history of diseases which occur at uncertain, and often at distant intervals, is all-important to the proper understanding of their true pathology; for every outbreak of an epidemic has some distinctive features by which it differs from those that preceded it, and it is only by a careful analysis of the descriptions of accurate observers at different periods, that certain principles, as regards this class of maladies, can be ultimately attained. We are, therefore, inclined to receive with gratitude every addition of this nature to medical literature, and to view it with a partial eye, even should it not come quite up to our critical ideas of what such a publication ought to be.

Dr. Peacock having had much experience of the last epidemic of influenza with which our islands, as well as the greater

part of the globe, were visited, has, in this volume, laid before the profession an account of it as it affected London, describing, "from personal observation, the several forms of the disease, and the course of treatment most effectual for their relief." We are, however, given to understand, that the descriptions must be regarded as applying to the epidemic in its more unfavourable manifestations, the limited accommodation of the Royal Free Hospital, to which the author is physician, admitting of the reception of the more severe cases only, and the persons that apply for admission being mostly in a very destitute condition.

The more immediate subject of the volume is preceded by an introductory review of the commencement and progress of the epidemic in London. It commenced in the month of November, 1847, having been immediately preceded by remittent fever of a low type. Its outbreak was as sudden and general as it usually is; for, although numerous cases of chest affection, with unusual febrile disturbance, presented themselves as outpatients at the Royal Free Hospital during October and November, the number of applicants suddenly increased on Monday, the 22nd, when the fresh recommendations rose from an average of fifty or sixty to 126, the greater proportion being cases of influenza. The same remarkable increase, and from the same cause, occurred on this day also at the Aldersgate-street Dispensary; and Mr. Stone informed the author that, in Christ's Hospital, nine boys (the first cases) labouring under influenza were admitted into the infirmary on November 21st, thirty-two on the 22nd, and forty-three on the 23rd.

We are here presented with a remarkable illustration of the difference as to the mode of spreading between influenza and cholera. The former, a type of epidemic diseases, suddenly attacks a number of individuals; the atmosphere is infected, and consequently all those predisposed are rapidly affected; while the latter creeps slowly on, by infection, from individual to individual, as is so remarkably evidenced in the present visitation, which has now been for many months trying to obtain a footing in the British islands. This fact, we may observe, has not escaped the observation of Dr. Graves, in his recent essays in our pages on the contagion of cholera.

The influenza in London did not disappear as suddenly as it appeared; although, after the 6th or 8th of December it was not very prevalent, it continued its ravages throughout the early months of 1848, and did not quite cease until April. The registered mortality from this disease, in the metropolitan districts, during the six months from November, 1847, to April,

1848, amounted to 1739; being only four for the week ending November 20th, while they increased to 374 in the week ending December 11th; from this date the decline was gradual until the 1st of April, eight being the number for the week ending that day.

We should wish much, were it in our power, to compare these facts with the mortality of our own city during the same period, when we were also visited with the influenza, but the data are wanting; there is no registration of deaths in Ireland, and, consequently, the statistics of disease, which have so important a bearing on its prevention and treatment, cannot be arrived at with any degree of certainty. England has had the advantage of this knowledge for many years, and the good effects thus obtained are well shown in the valuable quarterly returns of the Registrar-General. May we hope that Government will, ere another session of Parliament elapses, see fit to extend this little expensive, but valuable boon, to our island?

Of the various names proposed for this disease, Dr. Peacock prefers that of influenza, which has been adopted by Mr. Farr, in the Reports of the Registrar-General for England; he also sometimes employs Huxham's appellation, *epidemic catarrhal fever*; but he thinks that *epidemic catarrh*, under which term it has been described by many English writers, associates the disease too closely with the ordinary forms of catarrhal affection. The several varieties of the disease are treated of under the heads,—first, of simple catarrhal fever; secondly, catarrhal fever with pulmonary complication; and thirdly, catarrhal fever with predominant disorder of the abdominal organs.

And here we must at once state our dissent from Dr. Peacock's views as to the immediate connexion which he seems to think, and tries to prove, exists between influenza and fever. The disease, in our experience, has invariably exhibited a much closer resemblance to catarrh, possessing, of course, its own peculiar characteristics, and by which it is so readily distinguished. Were the epidemic to be looked upon as a variety of fever, very erroneous views as to treatment might be deduced, and the correctness of the indications which almost universal experience has confirmed brought in question.

The first form described by Dr. Peacock, under the name of simple catarrhal fever, presents the ordinary features of the disease so familiar to all physicians, differing from common catarrh chiefly in the suddenness of the attack and the characteristic debility of influenza, and, if we take merely the author's description, marked by symptoms sufficiently distinctive from fever. The description of his second form of the epidemic is

derived from twenty-eight cases; in eleven of these the local disease took the form of acute or subacute capillary bronchitis; in four, of bronchitis supervening on tuberculous disease; in six, of bronchitis complicated by disease of the heart or aorta; and in seven, of pneumonia. The features in all—an unnecessarily minute detail of which is given—were those of the local affection altered or modified by the characteristic debility of the influenza. His third form is described from cases in which there was marked derangement of the digestive system. This is of such very common occurrence in influenza that we have always looked upon it as one of the most frequent complications of the disease; and we cannot gather from the author's description sufficient grounds for regarding its presence as distinctive of a special variety of the epidemic, or for the still further subdivision into three classes which he proposes.

In speaking of the nature and causes of influenza Dr. Peacock gives a short and excellent review of the various theories, atmospheric, telluric, electrical, &c., which have been propounded to account for its origin and spread; and, having shown how little certain knowledge we possess on the subject, draws the just conclusion that the disease must for the present be regarded as "involved in the obscurity that veils the origin of epidemics generally." The ordinary predisponents to all epidemic and infectious diseases,—for example, defective drainage, want of cleanliness, over-crowding, impure air, deficient clothing, innutritious or too scanty food, &c.,—he correctly considers as conducing powerfully to the prevalence and fatality of the affection. This opinion, according to the author, has received additional confirmation during the late epidemic, the average weekly mortality for the nine weeks it raged in London being only 980, "while, had the population been as great in the years 1837, 1833, 1743, and 1733, as in 1847, it would have been 914, 914, 1636, and 1677 respectively;" the great difference being, he thinks, to be accounted for by the improved sanitary condition of the metropolis.

In the author's remarks on the treatment of influenza we do not find any novelty; he recognises the necessity of administering tonics and stimulants freely and early, a practice indicated by the special symptoms of the epidemic, and in the present day *almost* universally adopted. We would have omitted the qualifying adverb, were it not for two instances adduced by Dr. Peacock, in illustration of the ill effects of bleeding. Both cases were in young persons,—females, the one five, the other twenty years of age; both were bled from the arm previously to our author seeing them, and both terminated fatally.

In cases of influenza complicated with capillary bronchitis, probably the most fatal form of the disease, we agree with Dr. Peacock that in the second stage, when crepitation is extensively audible over different parts of the lungs, "an attempt should be made to get rid of the redundant secretion from the bronchial tubes by the exhibition of emetics;" but we do not at all agree with his statement that this is "effected with least exhaustion to the patient by the combination of sulphate of zinc with ipecacuanha." In such cases we have found no emetic of such value as mustard; it combines the properties of an emetic and stimulant,—just what is required. Moreover, it does not lose its effect by repetition—and in all such cases we have found its repetition after some hours useful, nor is the amendment produced by it temporary: both of which consequences, the author admits, result from the employment of the combination he proposes.

Most cases of influenza may, we believe, be cut short at their very commencement, but only then, by the administration of a large dose—half a grain—of muriate or acetate of morphia, repeated, if necessary, within three or four hours. This plan of cutting short ordinary catarrh has been known to the profession for many years, and was strongly advocated by Dr. Christison, who brought forward several cases in proof of its efficacy. We have found it equally successful in epidemic catarrh, but in the latter the opiate should be given in a much larger dose. Our experience has, however, convinced us that when the disease is fully established in the system, that is to say, in about twelve hours after the symptoms have appeared, the exhibition of a large opiate is injurious, from its tendency to increase the general debility. We have also seen some cases in the three last epidemics of influenza, which from the very first required the most powerful stimulants, and in which, of course, any opiate was inadmissible. These generally were persons beyond the age of 65, and, with very few exceptions, the disease terminated fatally in from twenty-four to forty-eight hours, with symptoms of *paralysis* of the lungs. This form of influenza has not been sufficiently noticed in the volume before us.

Dr. Peacock concludes his essay with lengthened reports of twenty cases selected to illustrate his remarks, which would have been much better omitted; they add to the bulk of the volume, and cannot prove of the least value to the reader, inasmuch as any information to be deduced from them is contained in the previous pages. The work is chiefly to be valued as containing a faithful history of the late visitation of epidemic influenza as it appeared in the great metropolis, and, therefore, deserves a place amongst all medical works of reference.

On Cancerous and Cancroid Growths. By JOHN HUGHES BENNETT, M. D., Professor of Physiology to the University of Edinburgh, &c. Edinburgh, Sutherland and Knox. 1849. 1 vol. 8vo. pp. 260, with 190 illustrations on wood.

IN the first volume of the New Series of our Journal we presented our readers with a lengthened analysis of Dr. Walshe's work on Cancer, as containing all that was then known of this most important disease; we, at the time, ventured to prophesy that whatever further knowledge was to be gained as regarded that malignant production would be due to microscopic investigation, and that new and improved means of treatment would be the consequence of the removal of our ignorance by this means. Our expectations have been, to a great extent, realized by the volume now before us; and although we cannot consider the investigation of this adventitious product yet completed, the way has been skilfully and clearly pioneered by Dr. Bennett, and the path of inquiry fairly opened, both for himself and other observers.

He has divided his work into two parts, in the former of which, extending to about half the volume, he records illustrative cases of cancerous and cancroid growths, with short commentaries on the particular facts of interest in each; and in the latter he reviews the present state of our knowledge of these growths, contrasts prevailing opinions, and offers his deductions from the Observations detailed in the first part.

By the term *cancerous* our author understands that peculiar structure which constitutes undoubted and characteristic specimens of cancer, as described by him in some of his Observations, and more accurately defined in the second part of the essay we are now noticing; and those which so closely resemble, and are continually mistaken for the malignant disease, he denominates *cancroid*, an appellation first used, in this sense, by Lebert. Notwithstanding, however, the extent of the investigations he has carried on, and the numerous cases he has collected,—fifty-six,—in all of which the morbid product has been examined by himself, Dr. Bennett acknowledges that the facts he has acquired are as yet “far too limited” to allow him to clear up with exactitude the contrariety of opinion which prevails on the subject of cancer.

From his previous researches, the reader will not be surprised to find, that Dr. Bennett has specially investigated the histology of cancer, and the results he has obtained are valuable, chiefly in correcting several erroneous notions which

have existed as to the characteristic shape of cancer cells, and the supposed facility with which they may be recognised under the microscope. There appears to be great variety in their appearance, both as regards structure and size, depending, as the author most correctly states, on the process of development of the cell being arrested at different stages of its growth. Their situation, the amount of exudation thrown out, and the pressure to which they may be subjected, also influence, more or less, their character.

“The so-called cancer cell,” writes Dr. Bennett, “occurs under numerous forms, presents very different appearances at different times, and is of variable size. The physical characters, so far as I have been able to determine them, are as follows: In form it may be round, oval, caudate, spindle-shaped, oblong, square, heart-shaped, or of various indescribable forms, from pressure on its sides. The external edge is generally sharp and well defined on the field of the microscope. In size it varies in different specimens from the one-hundredth to the one-tenth of a millimetre in diameter. The former size only occurs in a very early stage of its development; the latter only when the cell is old and contains other cells. By far the most common size is where it measures from the one-fiftieth to the one-thirtieth of a millimetre in diameter. It is invariably destitute of colour, except in melanitic cancer, when the pigment granules it contains tinge it of a light or dark bistre brown, passing into deep black. The cell-wall when young is smooth and distended; when old it is more or less corrugated and flaccid. Its contents are various. There is always one nucleus, often two, and sometimes they increase in number from three to nine. Most commonly there is only one, which is round or oval, generally the latter, and contains one or two granules or nucleoli. The nucleus, like the cell itself, varies in size, and may occupy from one-sixth to four-fifths of its volume. Between the nucleus and cell-wall there is a colourless fluid, which, at first transparent, becomes afterwards opalescent from the presence of molecules and granules. Sometimes these are so few as not to impair the transparency of the cell; at others so numerous as to render it more or less opaque. On the addition of water the cell-wall becomes distended by endosmosis, and is enlarged. Lymph and thick mucilage cause it to shrink and contract by exosmosis. When acetic acid is added, the cell-wall becomes more transparent, and in young cells is entirely dissolved, whilst the nucleus, on the other hand, either remains unaffected, or its margin becomes thicker, and its substance more or less contracted. Liquor potassæ reduces the whole to an amorphous mass.”—p. 145.

Dr. Bennett next describes the other structures which enter into the composition of cancerous and cancroid growths, as ascertained by the microscope, and also the knowledge acquired by the same means as to their chemical principles.

The latter he divides into four groups, namely: albuminous, fatty, mineral, and pigmentary principles. Their general anatomy is then investigated. He agrees with Dr. Walshe in the division of true cancer into three forms: scirrhus, encephaloid, and colloid. Cancroid growths, he considers, to include, beside the enchondroma of Müller, and epithelial growth of Ecker and Lebert, a third structure, described by himself, and which he proposes to call *fibro-nucleated*. He thinks, also, that inasmuch as fibrous, cartilaginous, fatty, and tubercular formations may be mistaken for cancer by good morbid anatomists, they are, therefore, sometimes cancroid.

Dr. Bennett disagrees with the opinion of Lebert, that the *cancer cell* is pathognomonic of a cancerous growth, and adopts the view of Müller, in thinking that "no single element is diagnostic."

"Nucleated cells, then," he says, "presenting the characters previously attributed to cancer cells, infiltrated among the meshes of a fibrous struma, constitute a tissue to which I give the name of cancerous. Conjoined with the fibres and cells there is invariably associated a viscous fluid, in which the latter, when demonstrated under the microscope, swim. The fibres, the cells, and the viscous fluid, constitute the three essential elements of a cancerous growth; and it is the relative amount of each of these which determines its peculiar form. If the fibrous element be in excess, it constitutes scirrhus or hard cancer; if the cells be numerous, encephaloma or soft cancer; and if the fluid abound and be collected into loculi or little cysts, it is called colloid cancer."—p. 171.

As regards the statistics of cancer to be derived from the observations hitherto published, Dr. Bennett thinks that little reliance is to be placed on conclusions thus deduced, so uncertain has been the knowledge which depended on all other means of diagnosis, unassisted by the microscope, and so admittedly frequent have been the mistakes which were and are still made. And we must agree with him that no one who has not made the histology of morbid productions a special subject of inquiry is qualified to decide between cancerous and cancroid growths; and we would impress on all who have the opportunity (and where is the medical attendant of a public charity who has not), the duty of cultivating a practical knowledge of the employment of the microscope in pathological inquiry. Investigations of this nature are not of such very great difficulty as is generally supposed; they require rather practical experience than a very great amount of skill. An easily managed and good microscope, of sufficiently high power for the purpose, can now be had at a moderate price in any of

our capitals; that of Oberhaüeser, which was first introduced into the British islands by Dr. Bennett, we prefer, as combining all these essentials. We have hopes, ere long, to see this new aid to diagnosis of as general use as auscultation and percussion in the wards of our hospitals, and as generally taught as a branch of clinical instruction. Should such be the case, our author will have the gratification of thinking that he has been the first British physician to give its due position to this branch of medical inquiry.

The chapter on treatment in Dr. Bennett's work, though short, contains many new and important observations. He only notices what he conceives to be the rational methods of cure, whether by retarding the growth of the cancer and thus preventing its development, or by extirpation; the means of prevention are also shortly reviewed.

Under the former head, the rational indication he conceives to be the prevention of cell-growth, which in the vegetable as well as the animal world, is more or less dependent on external circumstances. The proper application of cold and pressure, the absence of moisture—*dryness*, or rather the cutting off a due supply of nutrient fluid—he believes to be the most important; but, unfortunately, these can be said to be useful in external cancer only. So also as regards extirpation, whether by excision or the use of chemical agents, the early employment of the former of which he strongly advocates, while of the latter he is a decided opponent, from an apprehension that the irritation occasioned may excite fresh exudation, and thus extend the disease. The chief novelty in the author's views as to the means of prevention, savours, we think, too much of the theories of the recent chemical school of physicians, in which vital principle is so much overlooked, and the human body regarded as a vast laboratory of inert matter. It may be summed up in a few words, viz.: cancer is an albuminous product, abounding more and more in fat as its cell-growth increases; and accordingly all dietetic substances easily converted into fat, including not only oily matters themselves, but starch and sugar, should not be used by cancerous patients.

Much has been done by Dr. Bennett to clear up the obscurity with which the *exact* diagnosis of true cancer has been enveloped; but a careful perusal of his most valuable volume has only convinced us that very much more still remains to be done before our knowledge of this malignant disease can be perfected. And his researches clearly prove that those who would follow up the subject must be prepared to bestow patient research, long-continued observation, and great mental labour, on the investigation.

Lectures on the Diseases of Infancy and Childhood. By CHARLES WEST, M. D., Fellow of the Royal College of Physicians. London, Longman and Co. 8vo. pp. 488.

MOST of our readers are doubtless familiar with the lectures of Dr. West, as they were published in the Medical Gazette; and such will welcome them in their separate form as a most valuable addition to their library in a department hitherto singularly barren. They are, however, considerably increased in matter, and more carefully finished, and now present to the reader a work distinguished by minute accuracy of observation, extensive pathological investigation, and sound practical instruction.

“The observations were made in the large field presented by the Children’s Infirmary, which was first thrown open to me in the year 1839 by the kindness of my friend, Dr. Willis, then physician to that institution; to which office I succeeded on his resignation in 1842. Very nearly 14,000 children have thus been brought under my notice during the past nine years; and I have kept accurate notes of the diseases of 600, as well as of the results of 180 dissections of cases in which those diseases terminated fatally.”

The first lecture points out the peculiarities of diseases of children, the difficulties attending their study, the mode of overcoming those difficulties, and the rules for the examination of sick children, &c.; then follow the diseases of the nervous system, congestion, hemorrhage, inflammatory affections, hydrocephalus, simple inflammation, chronic hydrocephalus, hypertrophy, hydrocephaloid disease, diseases of the spinal cord, trismus, night terrors, epilepsy, chronic paralysis, &c.

Next we have diseases of the respiratory organs, imperfect expansion of the lungs, collapse of the lungs, bronchitis, pneumonia, œdema of the lungs, gangrene, pleurisy, croup, spasm of the glottis, hooping-cough, phthisis.

Diseases of the heart succeed, and then we have those of digestion and assimilation, dentition, stomatitis, cynanche parotidea, dyspepsia, softening of the stomach, hematemesia, icterus, constipation, diarrhœa, peritonitis, tabes mesenterica, intestinal worms.

The diseases of the kidneys include nephritis, calculous disorders, diabetes, incontinence of urine: and, in conclusion, we have abdominal tumours, infantile syphilis, remittent fever, small-pox, chicken-pox, measles, and scarlatina.

Of the entire volume we have been most highly impressed

with the lectures on diseases of the nervous and respiratory systems, which exhibit great care, acuteness, and research, and we shall select one or two diseases which are less known, or less accurately described by other authors, as specimens of our author's mode of treating his subjects.

"Congestion of the Brain" occupies the third lecture, and after mentioning that Mauthner, of Vienna, found it in 186 out of 229 children whose bodies he examined, Dr. West mentions that the disease may be active or passive, according as it is caused by an increased flow of blood to the head or an arrest of its return. The head symptoms which usher in eruptive fevers illustrate the former, and those which occur in whooping-cough the latter.

"Active cerebral congestion is not a very unusual consequence of the disturbance of the circulation *at the outset of the eruptive fevers*. Convulsions and apoplectic symptoms sometimes come on suddenly in a child previously, to all appearance, in perfect health, and may even terminate in death in less than twenty-four hours. The brain is found loaded with blood, but all the other organs of the body are quite healthy. A year or two ago I was requested to be present at the examination of the body of a boy not quite two years old, who had been in perfect health until the day before his death, which took place under such circumstances as I have before mentioned. The congested state of the cerebral vessels gave but little satisfactory information; but the same evening the brother of the child was taken ill with vomiting, intense fever, and sore throat. In a few hours a red rash appeared. The case was one of scarlet fever, and ran its course with considerable severity, though, happily, to a favourable termination."—p. 22.

Again, similar effects may be produced by exposure to the heat of the sun, of which Dr. West gives an example. Dentition may also give rise to congestion of the brain. Now, as to the symptoms, our author observes :

"Cerebral congestion may, as you have seen, come on very suddenly, its symptoms from the first being alarming, and such as to call for immediate interference; a general uneasiness; a disordered state of the bowels, which are generally, though not invariably, constipated, and feverishness, may have for a few days preceded the more serious attack. The head by degrees becomes hot, the child grows restless and fretful, and seems distressed by light or noise, or sudden motion; and children who are old enough sometimes complain of their head. One little boy, nearly three years old, who died of congestion of the brain, had seemed to suffer for some days before any alarming symptoms came on from pain in the head. He sometimes awoke crying from his sleep, or when awake would suddenly put his hands to his ears, exclaiming, "Oh! hurt, hurt." Usually,

too, vomiting occurs repeatedly; a symptom on the importance of which I have already insisted, since it is not only confirmatory of others, but also may exist before there is any well-marked indication of the head being affected, and when, though the child seems ailing, there is nothing definite about his illness. The degree of fever which attends this condition varies much, and its accessions are irregular, but the pulse is usually much and permanently quickened; and if the skull be unossified, the anterior fontanelle is either tense and prominent, or the brain is full and seems to pulsate forcibly through it. The sleep is disturbed, the child often awakening with a start, while there are occasional twitchings of the muscles of its face or the tendons of its wrist."

This state of things may continue for several days, and may either pass off without treatment, or may proceed to the second stage, or degenerate into acute hydrocephalus. Congestion of the brain is not merely a serious, it is not unfrequently a fatal malady. The drowsiness and heaviness increase; the child is fretful, and somewhat confused when roused; light and sound occasion distress; the bowels are generally constipated, although the vomiting may have ceased. The pulse is smaller and perhaps irregular, though without actual intermission.

"An attack of convulsions sometimes marks the transition from the first to the second stage, or the child passes without any apparent cause from its previous torpor into a state of convulsion, which, subsiding, leaves the torpor deeper than before. The fits return, and death may take place in one of them; or, the torpor growing more profound after each convulsive seizure, the child at length dies comatose."

The treatment, of course, will be modified by the cause; and Dr. West strongly insists upon attention to this point.

"There are, however, but few exceptions to the rule which prescribes the abstraction of blood, either locally or generally, as one of the most important remedies in cases of active cerebral congestion. If the symptoms set in violently, you must deplete freely, and will find that relief will follow more speedily on the abstraction of blood from the jugular vein, than on venesection or the application of leeches. It is not easy to define exactly the quantity of blood which may be drawn, but from two to three ounces would probably be as much as you would ever be warranted in taking from a child a year old; and the appearance of manifest relief to the symptoms should be a signal to you for stopping its flow even before that quantity had been obtained."

It may, of course, be necessary to repeat the bleeding, but a good deal will depend upon the careful observance of regimen and the effect of other remedies. The room should be shaded

and quiet, and cold lotions should be applied to the head. Fomentations of hot water, with a little mustard in it, to the feet, are very useful. A brisk purgative should be given at the outset, and if the convulsions are unchecked or the coma is increasing, Dr. West advises cold affusions, and mentions several cases in which he has used it most successfully.

The bowels must be kept free, and for this purpose Dr. West recommends small doses of calomel two or three times a day, accompanying each powder with "a dose of a mixture containing nitre and sulphate of magnesia." So much for the treatment of the majority of cases; of course each case will require some little modification, and some a considerable deviation.

It would give us much pleasure if we were able to enter upon Dr. West's description of the other diseases of the nervous system, which contain very graphic delineation and very sound practice, but we trust that our readers will peruse them for themselves. We must, however, pass on to the diseases of the lungs, and, omitting the admirable chapters on bronchitis and pneumonia, we shall select Dr. West's account of *pleuritis* for our notice. He agrees as to its frequency with Dr. Battersby, whose admirable paper in this Journal must be fresh in the memory of our readers. It is neither so rare nor so difficult to recognise as many writers have supposed, nor does it differ much in children from the same disease in the adult. The *post mortem* appearances are the same, and

"The most frequent complication is inflammation of the lungs; besides which it occasionally happens, when the left pleura has been the seat of inflammation, that the disease extends to the pericardium, which on two occasions I have found lined with lymph, partially adherent to the heart, and containing sero-purulent fluid."—p. 212.

The symptoms and physical signs are the same at all ages, with some modifications during childhood, and chiefly at the commencement of the disease.

"The history of a case of acute pleurisy in childhood," says Dr. West, "is generally something to this effect: A child previously in perfect health is suddenly attacked with pain, referred to the chest or upper part of the abdomen, so severe as to occasion it to cry aloud, perhaps attended at first with vomiting of a greenish fluid, accompanied with fever, a rapid pulse, and hurried respiration, interrupted by a frequent short cough, which evidently occasions pain, and which the child labours, though in vain, to suppress. After a few hours the severity of the pain subsides, but the fever, hurried respiration, and cough continue, and the child, though usually it looks heavy and seems

drowsy, yet becomes extremely restless at intervals, cries and struggles as if in pain, and violently resists any attempt to alter its position, since every movement brings on an exacerbation of its sufferings. The posture which it selects varies much. Sometimes its breath seems disturbed by any other than an upright position; at other times it lies on its back or on one side; but, whatever be the posture, any alteration of it appears to cause much distress, and is sure to be resisted by the patient. The probabilities are, that if you auscultate the chest of a child in whom these symptoms exist, you will hear good breathing through the whole of one lung. On the other side the air will be most likely found to enter less freely, though unaccompanied by any moist sound, perhaps unattended by any morbid sound at all; or a rough sound like a rhonchus may be audible on this side, and for this you may very likely at first take it, though with more attention it will be discovered to be a friction sound. A day or two later you will probably detect a sound like that of bronchial breathing as you pass your ear from above downward along the posterior part of the chest, while the friction sound will have disappeared; and still lower there will be an utter absence of all sound. The walls of this side of the chest, if their tenderness do not prevent your trying percussion, will yield a much less resonant sound than usual, while at the same time a distinct sense of solidity will be communicated to the fingers."—p. 212.

As the disease advances we have of course the phenomena of pleurisy developed, diminished mobility and increased size of the affected side, the protrusion of the intercostal spaces, displacement of the heart, &c. The commencement of the attack varies sometimes in rather a remarkable manner, the symptoms being referable more to the head than the chest.

"The child is seized with vomiting, attended with fever and intense headach. It either cries aloud or is delirious at night, or screams much in its sleep, and, when morning comes, complains much of its head, but denies having any pain whatever in its chest, while the short cough and hurried breathing may be thought to be merely the result of the cerebral disturbance. The diagnosis of cases of this kind is sometimes very difficult, since auscultation does not always afford the information that you might expect. It often happens that no friction sound is perceptible, and that you have no other indication to guide you aright beside the feebleness of the respiratory murmur on the affected side. The child, too, fearful to take a deep inspiration, fills neither lung completely, so that to a great degree you lose the information gained by a comparison of the breathing in one lung with that of the other. Still the history of the case will do much towards preserving you from error. The outset of the illness has been far too acute, attended with far too much febrile disturbance, for a case of tubercular hydrocephalus, while many of the signs of cerebral mischief which might be expected in a case of

simple encephalitis have not presented themselves. The heat of the head is not greater than that of the rest of the surface; the crisis with which the disease set in has not ended in coma. It happens but seldom that convulsions mark the commencement of the disease; but if they had occurred at the outset they have not since returned; neither writhing of the muscles, nor strabismus, nor retraction of the head is present; and though the child may cry (as children when ill or fretted often do) at the curtain being undrawn and the candle brought near it, yet there is no real intolerance of light. The dyspnoea, also, is too permanent, and the short, barking cough too frequent, for either to be sympathetic of cerebral disorder.”—p. 213.

When the disease has been attacked early, Dr. West has found that nearly all the children recover, the fatal cases being for the most part those which had been neglected until an advanced period. As in adults, bleeding, calomel, and Dover’s Powder are the principal remedies. Leeching may be necessary after the general bleeding, and is preferable to cupping on account of the tenderness of the side. If, after active and judicious treatment, the side of the chest remains distended with fluid, Dr. West seems rather inclined to adopt paracentesis. He does not mention counter-irritation, which we have always found most valuable after the acute symptoms have been somewhat subdued.

As our limits do not permit a lengthened notice of this valuable work, we shall, in conclusion, direct our readers’ attention to the lecture on jaundice, a disease deserving of more attention than it has generally received. Jaundice is more frequent among immature and unhealthy infants; it rarely occurs in the Dublin Lying-in Hospital, but it is extremely common in the Foundling Hospital at Paris. Again,

“In none is it so often met with, or in such an intense degree, as in infants affected with induration of the cellular tissue, in whom the yellow colour is often so deep as to be manifest in the serum infiltrated into the cellular tissue, or poured into the cavities of the chest or abdomen.”

And these examples favour the opinion of those who maintain that in such cases the jaundice is not due to any cause primarily seated in the liver, but rather to the defective respiration and impaired functions of the skin re-acting upon the liver.

It may also arise from malformation or absence of the hepatic or cystic ducts, and such cases end fatally in the course of a few weeks.

“Jaundice may also occur in older children under the same circumstances as in adults, and associated with similar symptoms; the

evacuations being white, the urine high-coloured, and more or less pain and tenderness being experienced in the hypochondriac region. Such cases are most frequently met with during the summer or autumn, especially at times when diarrhœa is prevalent; the skin sometimes assuming a generally yellow tinge as the purging subsides; while in other instances the jaundice occurs as an idiopathic affection, though apparently due to the same causes as have produced diarrhœa in other children.

“In the instances that have come under my notice the skin has never assumed a very deep yellow tinge, and the constitutional symptoms have seldom been severe. Now and then, however, considerable febrile disturbance precedes the appearance of the jaundice for two or three days; the skin is dry, though not very hot; vomiting occurs, and the child complains much of headach and dizziness, and rests ill at night, or awakes in a state of alarm. The resemblance between these symptoms and some of those which occur in cases of real cerebral disease is almost sure to excite much apprehension in the mind of the parents, and may even render it difficult for you to form a correct diagnosis. The following circumstances will, however, usually suffice to preserve you from error: The attack has not, in most instances, been preceded by those indications of generally failing health which so often occur during many days before the symptoms of hydrocephalus manifest themselves, and it is not attended either by the anxious expression of countenance, the heat of head, or the intolerance of light, by which cerebral disease is accompanied. Though the sleep may be disturbed it is usually less so than in hydrocephalus, the pulse is less frequent, and though the child vomits occasionally, it does not suffer from constant nausea. When to these symptoms tenderness on pressure in the hypochondriac region is superadded, with the appearance in a day or two of high-coloured urine or white evacuations, and lastly of the yellow tinge of the skin, no further possibility of error remains.

“The treatment of jaundice in the child calls for but very simple remedies. If it be accompanied with much tenderness in the hypochondriac region, a few leeches may be applied in that situation with much advantage. If, however, this be not the case, the employment of small doses of the sulphate of magnesia in combination with the tincture of rhubarb, every four or six hours, with three grains of the hydr. c. cretâ, for a child of five years old, at bed time, will generally suffice to restore the patient to health in the course of four or five days. Should the appetite continue bad, and the child fretful and languid, after the subsidence of the jaundice and the return of the evacuations to a more healthy character, the compound infusion of roses, either alone or in combination with sulphate of magnesia, will be found of much service. In some cases, however, removal to the country or to the sea side appears to be absolutely necessary to the child's complete recovery.”—p. 377.

We take leave of Dr. West with great respect for his attain-

ments, a due appreciation of his acute powers of observation, and a deep sense of obligation for this valuable contribution to our professional literature. His book is undoubtedly in many respects the best we possess on diseases of children. The extracts we have given will, we hope, satisfy our readers of its value; and yet in all candour we must say that they are even inferior to some other parts, the length of which prohibited our entering upon them. That the book will shortly be in the hands of most of our readers we do not doubt, and it will give us much pleasure if our strong recommendation of it may contribute towards this result.

An Essay on the Cerebral Affections occurring most commonly in Infancy and Childhood, &c. By VALENTINE DUKE, M. D. Professor of Medical Jurisprudence in the School of the Apothecaries' Hall. Dublin, Fannin and Co. 8vo. pp. 90.

WE notice this little work with great pleasure, not only on account of its intrinsic value, but because it is the production of an Irishman, and was awarded the prize by the English Provincial Medical and Surgical Association, in August last. It is pleasant to see science breaking down invidious national distinctions, and claiming brotherhood with our fellow-labourers in the same cause. But it is still pleasanter to feel that this has been done by our fellow-townsmen, and that he has won an honourable testimonium from an English tribunal.

After a slight notice of the literature of the subject, Dr. Duke proceeds to consider, shortly, congestion of the brain, irritation or erethism, the hydrecephaloid disease, convulsions, acute meningitis, tubercular meningitis, or acute hydrocephalus, and chronic hydrocephalus. The author has evidently paid considerable attention to each of these subjects, but especially to tubercular meningitis.

The principal section of the Essay is that devoted to acute, tubercular, and chronic meningitis. Acute meningitis Dr. Duke thinks comparatively rare in this country, but then he regards it as distinct from hydrocephalus. Among the causes he mentions it as preceding the eruption of small-pox, and as following the sudden suppression of a discharge from the ear.

In the convulsive form, the disease generally commences with convulsions, followed by febrile disturbance, but with less vomiting and constipation than in the phrenitic form, which generally begins with a rigor, followed by fever and vomiting, with headach, intolerance of light and sound, quick pulse, hot

and burning skin, &c.; the intellect is soon disturbed, and we have delirium alternating with stupor and convulsions. The symptoms rapidly increase, and if not arrested by treatment,

“The convulsions become more frequent and severe, with grinding of the teeth, strabismus, dilated pupil, and coma. When it is protracted, hemiplegia is sometimes present, and occasionally spasms of the muscles of the arms and legs; these latter more particularly when there has been an extension of the diseased action to the spine.”
—p. 23.

Dr. Duke is an advocate for blood-letting in this disease, but he does not seem impressed with the advantage of (comparatively) large bleeding at the commencement. We know of no disease in which it is so useful, and without which the treatment is so unpromising. Purgatives, especially in the convulsive form of the disease, enemata, lancing the gums, tartar emetic, and warm baths, are strongly recommended. The author speaks highly of the benefit of “nausea, kept up for some hours.” In addition, we are advised to use mercury, counter-irritants, and ice to the head, and, if necessary, small doses of Dover’s Powder in combination with the calomel.

Dr. Duke commences his notice of tubercular meningitis by a cursory review of the writers thereon, and, in conclusion, fixes upon the work of the late Dr. Cheyne, as “by far the clearest, most concise, and, withal, most true to nature,” of any with which he is acquainted; and he adopts and extracts the description of the different varieties given by this author.

As regards the symptoms, we cannot say that Dr. Duke has added anything to our previous knowledge; nor is this surprising, after the numerous and valuable treatises which have appeared upon the subject. He very justly enumerates the nervous symptoms as being those which give the earliest intimation of mischief; such, for instance, as the restlessness and irritability, variations of temper, intolerance of light and noise, irregular pains, screaming during sleep, pain in the head, &c. The difficulty is to determine whether these are the precursors of meningitis, or of some other febrile attack of less consequence.

Dr. Duke has laid down the diagnosis between the present disease and simple acute meningitis, meningeal apoplexy, cerebral hemorrhage, hypertrophy of the brain, convulsions, typhus, and remittent fever, &c. We should have preferred a little more detail on some of these points, because of the difficulty which every one must have experienced thereon in practice.

In treating these cases Dr. Duke considers that the usual

antiphlogistic means, such as bleeding, mercury, &c., are less admissible, and less likely to be successful. He almost always commences the treatment of a suspected case by giving an emetic of ipecacuanha or tartar emetic, and with great benefit and perfect safety. Purgatives are to be used but sparingly; calomel and jalap, or rhubarb, or senna; or, in cases where there is much irritability of stomach, half a drop of "Short's" croton oil will be the best, preceded by a purgative enema.

These evacuations having been premised, the propriety of blood-letting comes to be considered. This will depend upon the strength of the child and the amount of inflammatory symptoms; if these are marked, blood-letting will be indicated. Dr. Duke recommends the application of leeches to the mastoid process or to the temples, and, in some very acute cases, bleeding from the arm. Mercury, of course, should be given, and its effects are good, but not marked, as in some other inflammatory diseases. Calomel with opium, or mercury with chalk, or magnesia with James's Powder and Dover's Powder, are preferred by the author. Next to these remedies come counter-irritants to the head, cold applications, fomentations to the feet or abdomen, &c.

Dr. Duke states that he has tried iodine in these cases, but cannot "speak very decidedly of any success fairly attributable to its use."

We have thus shortly run through this essay; we should gladly have entered into more detail had our limits permitted. It contains a considerable amount of information, and very excellent practical suggestions, simply and unostentatiously written, and we trust that its success will encourage Dr. Duke to persevere in the course of investigation upon which he has entered.

The following extract from the section on "Irritation or Erethism of the Brain," will convey to our readers some notion of the author's style and mode of treating his subject:

"Morbid irritation or erethism of the brain is also sometimes met with among infants, especially in large cities. It is characterized by an increased irritability of the sensorium, and susceptibility to impressions; noise and light are equally disagreeable, and the child is uneasy and fretful. The eye-lids are generally closed, and the flexion of the thumb on the palm of the hand, so well known to nurses, is constantly observed. The child is generally very watchful, and gets little sleep. There is not any complaint of pain in the head, nor is there any increased frequency of pulse or heat of skin.

"This affection is generally attendant upon dentition in delicate children, and may arise in them from any debilitating cause. I have

seen it occur after remittent fever, long protracted, and also after diarrhœa. If this state of morbid irritation should exist long, hydrocephalus might be induced. Congestion of the brain, which we have already spoken of, and the hydrencephaloid disease, to be hereafter described, have many symptoms in common with erethism. The watchfulness and extreme sensibility will contrast with the stupor and tendency to coma in the former.

“Our principal efforts must be directed to allay irritability and procure sleep; we must also be careful to support the strength by light nourishment; but stimulants, as wine, must be avoided. The bowels must be evacuated by enemata and mild aperients; cold also should be assiduously applied to the head, and warm stupes to the feet. A very nice method of applying the latter is by means of flannel wrung out of hot water, rolled round the legs and feet, this again being wrapped up in a warm, dry piece of flannel, or small blanket. I have frequently known this produce sleep in many affections of childhood, and it has the recommendation of disturbing the child very little, and is applicable in cases where the fatigue of a general warm bath would be too great.

“Nothing will sooner relieve our patient, and assist the means we prescribe, than change of air. It really acts sometimes magically, as all who have seen much of the diseases of children can vouch.

“Sometimes it may be necessary to have recourse to the use of opium, which, if cautiously and prudently administered, will prove a useful assistant in breaking the habit of wakefulness and procuring sleep.”—p. 11.

On the Nature of Limbs. A Discourse delivered at an Evening Meeting of the Royal Institution of Great Britain. By RICHARD OWEN, F. R. S. London, Van Voorst. 1849. 8vo. pp. 119.

The Homologies of the Human Skeleton. By HOLMES COOTE, F. R. C. S. E., Demonstrator of Anatomy at St. Bartholomew's Hospital. London, Highley. 1849. 8vo. pp. 100.

WERE we asked the grand characteristic by which the organic sciences, as studied at the present day, are distinguished from those same sciences as they presented themselves some very few years ago, we would have no hesitation in pointing to two great features which eminently mark the existing condition of biology,—placing it in a position far in advance of the state of science at a comparatively recent period, and producing results which appear utterly disproportionate to the time during which their influence has operated.

The features to which we allude are, first, the general recognition of metamorphosis or developmental phenomena as a

condition of all organic beings; and, secondly, the perception of homological relation, or the determination of the nature and import of organs. The second, indeed, of these great means of arriving at truth involves, to a certain extent, the first, which either becomes itself the grand source from which the homological relations of an organ must be determined, or else corroborates the conclusions derived from other and independent sources.

By the doctrine of homologies a new and startling interest is thrown over apparently the most unimportant objects;—a minute process on a bone, the detection of a speck of cartilage, the discovery of a scarcely perceptible foramen or fissure, may be full of significance; and the dry and barren facts of the descriptive anatomy of a few years ago have, in the new direction which has been given to organic research, assumed an importance which could never have been anticipated, have combined themselves into a grand formula by which we interrogate Nature in her most secret operations, and extort from her the mysteries of morphologic law.

It is now nearly half a century since the celebrated Oken, during a walk in the Hartz Forest, observed upon the ground the blanched and weather-beaten skull of a deer. The deep-thinking naturalist took it up and contemplated it for a moment; a strange idea flashed upon him with all the power of a mighty truth, and by, as he himself tells us, a kind of "inspiration." "It is a vertebral column!" he exclaimed; and from that moment a new impulse and a new direction was given to the study of organization.

The doctrines of homology, however, were long only in their infancy, and took many a wrong path, and made many a stumble, during this early period of their growth. Oken, in the development of his original idea, maintained that the entire body of a vertebrate animal was exactly repeated in the head, that the upper jaw corresponded to the two fore limbs united at the symphysis; the lower jaw to the two hind limbs similarly joined; the teeth to the nails; while the abdomen, thorax, intestines, lungs, &c., were also all represented in the head. It was reserved to a later period, and to the researches especially of our own Owen, to point out the true homological import of the parts thus incorrectly viewed by the German philosopher.

One of the most important steps in the determination of the true nature of organs is the conception of an ideal *archetype*, in accordance with which every member of some great natural group is constructed, and from which, by excess or defect of development, or by other easily comprehended change, but

never by the addition of new elements, we may deduce every form presented by the group for which our archetype has been imagined. Let us, however, not be misunderstood; the framing of the archetype is not the first but almost the last step in our homological inquiries. Our typical animal or plant must not be constructed from any vague notion of what the archetype *ought* to be, and then be employed as a standard with which all our conceptions of the nature of organs must correspond. It is only by laborious comparison of the existing organs in all their modifications, by seizing on the constant element in each, and carefully eliminating all that is non-essential, that we are at last enabled to construct our archetypal organism, which then becomes the true general expression for the organic group from which, by the above process, we have derived it. Such an archetype has been framed by Professor Owen for the great vertebral series, and the student will do well to impress its form on his memory. We shall now proceed to examine the results to which this distinguished zoologist has been led in his attempt to explain the signification of the parts composing the endoskeleton of the vertebrata.

The vertebral skeleton may be viewed as composed of a number of distinct but essentially similar segments arranged in succession from the anterior to the posterior end of the body. Each of these segments is called a *vertebra*, a term, however, here used in a much more definite sense than that which the human anatomist is in the habit of applying to it. Every complete vertebra or segment of the skeleton consists of a *centrum* or body, and of two arches, one, the *neural arch*, passing backwards for the formation of the canal destined for the protection of the spinal cord; the other, the *hæmal arch*, directed forwards for the protection of the great vascular centres. The neural arch is formed on each side by an element originally distinct, which in the terminology required by this new mode of viewing the subject, is called *neurapophysis*, and it is completed behind by a piece of bone called the *neural spine*. The walls of the hæmal arch are in like manner formed by a pair of elements called *hæmapophyses*, and closed in by a *hæmal spine*. Another important pair of elements likewise exists in the composition of the typical vertebra; these are termed *pleurapophyses*. In those parts of the hæmal arch which are especially dilated by the development of the great vascular centres the pleurapophyses become increased in length, and intervening between the centrum and hæmapophyses, separate the latter from their attachment to the centrum, and then, assisting in the formation of the great cavity which protects the heart and other enlarged portions of the

vascular system, are commonly known as ribs; while the hæmapophyses, thus pushed outwards from their attachment to the bodies of the vertebræ become the costal cartilages or sternal ribs, and the sternum itself must be viewed as the coalesced hæmal spines of all the vertebræ thus modified. Besides the elements now mentioned as constituting the typical vertebra, namely, the centrum, neurapophyses, pleurapophyses, hæmapophyses, and neural and hæmal spines, processes of a secondary or derivative character more or less complicate it, but these are not essential, and need not now be taken into consideration.

There is, however, another very important element which we must consider as part of the primitive segment or vertebra. This is a diverging appendage or ray which is borne by the hæmal arch. It may be seen in the thoracic segments of birds and crocodiles, and in fishes. It is less constant than its supporting arch, but is yet, as we shall presently see, full of significance.

Having thus determined the construction of a primitive segment of the skeleton, we are at once prepared to enter upon the consideration of the main subject to which Professor Owen's work is devoted,—the nature or signification of limbs. Now under whatever form the limbs of vertebrate animals exist, they are invariably borne upon inverted arches; that which supports the anterior limbs is the scapular arch, that supporting the posterior the pelvic arch. The scapular arch, in its typical condition, consists of a pair of "scapulæ," of two bones specially termed "coracoids," which converge towards each other, and uniting with the "sternum" below, thus complete the inverted arch.

The question now presents itself, to what elements of the primary segment are we to refer the arch thus constituted? It can be shown to be the detached hæmal arch of a vertebra, the scapulæ being the pleurapophyses or vertebral ribs, the coracoids, the hæmapophyses or sternal ribs, and the sternum, the hæmal spine. But here again it will be asked, from what particular centrum has this hæmal arch wandered? To which of all the segments of the skeleton are we to refer it as its proper home? We have already seen that one of the first steps in this great department of anatomical research was the comparison of the skull to a vertebral column; and accurate observation has now proved that the skull is really composed of four vertebræ, with the neural arches expanded and otherwise modified for the protection of the brain. Now the occipital or fourth cranial vertebra is, except in a single class, composed of a centrum and neural arch alone, without any trace of hæmal

arch; here, then, is an anomalous condition for which an explanation must be sought, and this explanation is at once afforded by the hypothesis that the scapular arch belongs in reality to the occipital vertebra, that it is truly the hæmal arch of this vertebra, having been dislocated from its typical attachment and displaced backwards so as to occupy the place in which we find it in mammals, birds, and reptiles. In fishes, the one exceptional class above referred to, the scapular arch occupies its normal position, and is there actually the hæmal arch of the occipital vertebra.

We have here made no allusion to the clavicle. This bone, indeed, though so highly developed in man, with whom the coracoids are reduced to the condition of mere processes of the sternum, is yet very inconstant, and forms no element of the scapular arch. Strong reasons, into which we cannot now enter, are adduced by our author to prove that the clavicle is the displaced hæmapophysis of the atlas or first cervical vertebra.

So much, then, for the true signification of the scapular arch. Our limited space has, indeed, obliged us to confine ourselves to a mere statement of the results; for the arguments and comparisons on which these results are founded, we must refer to the work itself. The pelvic arch may, in like manner, be shown to be the hæmal arch of one of the sacral vertebræ; and its different elements admit of an exact comparison with those of the anterior or scapular arch.

Having thus briefly considered the anterior and posterior sustaining arches, we are at once led to the examination of the limbs themselves, for whose support these arches are so singularly fitted. We have seen that the typical segment is complicated by the existence of a pair of diverging appendages borne upon some part of the hæmal arch. This may be well seen in birds, where the appendage exists under the form of a flat process of bone, projecting backwards from each rib, so as to overlap the rib which lies immediately behind. Now, these diverging appendages may be homologically viewed as rudimental limbs, and the fore and hind true limbs as the specially developed appendages of their respective supporting arches. We may, indeed, from the simple ray of the lepidosiren, which no one doubts to be the homologue not only of the pectoral or ventral fin of other fishes, but also of the anterior or posterior limbs of the higher vertebrates, and which presents a condition scarcely in advance of that of the costal appendages of birds,—we may, from this primitive limb, trace a gradual complication by division and development, but not by the addition of new parts, through the still comparatively simple limbs of the proteus and

amphiuma, and the almost ray-like limbs of the monodactyle horse, up to the highly developed superior and inferior extremities of man.

Thus, by a series of most beautiful and ingenious comparisons, and by a rigidly logical treatment of his subject, has our author arrived, in the beautiful "discourse" now before us, at conclusions which, were we not already aware of his labours in this most pregnant department of research, would come upon us with a startling sense of their strangeness and utter repugnance to our old anthropotomical studies:

"If it be admitted that the upper limb (arm and hand) of man is the homologue of the fore-limb of the amphiume, of the pectoral fin of the fish, and of the pectoral ray of the lepidosiren, it follows that, like the latter, it must also be the 'diverging appendage' of the arch called 'scapular,' which is the hæmal arch of the occipital vertebra; and, therefore, however strange or paradoxical the proposition may sound, that the scapular arch and its appendages, down to the last phalanx of the little finger, are truly and essentially bones of the skull."—p. 112.

We would willingly dwell much longer on this ingenious and elegant contribution to organic science; we would gladly enter into a further detail, not only of the truths of general and special homology which it contains, but of those of *serial* homology; of the comparison, for instance, of the anterior with the posterior limbs, and the correspondence which is shown to exist in the most minute details, not only of the limbs themselves, but of their sustaining arches. The space, however, at our disposal, obliges us to take a reluctant leave of a book from whose perusal we have derived unalloyed pleasure, while we heartily recommend to all our readers the "Discourse on the Nature of Limbs," as not only presenting them with new and beautiful views of the structure of living beings, but also placing in their hands a powerful instrument in the further search after biological truth.

The discoveries of Owen could not fail to excite, among British anatomists, a general taste for that philosophical pursuit of anatomy in which he has been so distinguished a leader; and we are heartily pleased to see an attempt made to introduce the homological principle into our schools. We well recollect the feelings of mental fatigue with which we used to listen to the wearisome demonstration of the skeleton during our early anatomical studies. All, however, is now changed; the minute and dry details of osseous anatomy, which for us had no meaning beyond that of a tax on the already over-taxed memory, are to the homologist full of lucid

significance; and we feel confident that both student and teacher will have reason to rejoice in the appearance of Mr. Coote's little work. The main object of the book is the placing before the student a connected view of the homologies of the human skeleton, as pointed out by Owen and the continental anatomists. The author does not aim at original matter, but the established facts are brought together with a clearness and conciseness which it has not often been our lot to meet. We regard the present, indeed, as a most useful book; and with the works of Owen and Coote before us there can surely be no longer any reason why a philosophical anatomy shall not constitute, in these countries, as it has done abroad, an essential part of the education of the student of organic science.

The Natural History of Ireland. Vol. I.—Birds. Comprising the Orders Raptores and Insessores. By WILLIAM THOMPSON, Esq., President of the Natural History and Philosophical Society of Belfast, &c. London, Reeve. 1849. 8vo. pp. 434.

DURING the last twenty years the name of Thompson has been of frequent recurrence in the pages of natural history. To Mr. J. V. Thompson, whose researches were made and published at Cork, naturalists are indebted for a description of the singular transformations which the *Crustacea* and *Cirrhipeda* undergo in their progress to maturity; thus revealing facts so opposed to the pre-existing state of opinion that they necessarily involved entirely new views of the classification and affinities of these two classes of articulated animals. To Mr. William Thompson, of Belfast, naturalists are in like manner under obligation for an extensive series of papers of great originality and value, published in the "Proceedings" and "Transactions" of several societies, or in the pages of scientific journals, and continued for many successive years.

The papers of Mr. W. Thompson, to which we have just referred, and which amount to between ninety and one hundred, are of a very diversified character, and (with the exception of insects) range through all classes of the animal kingdom. Some of them embody copious information regarding habits and distribution; others define with minute detail species which had not until then been described, or note the occurrence of such as were known in other countries, but not registered as Irish. The number of species thus added to our Fauna by the contributions of Mr. W. Thompson may probably form an aggregate of not less than 700; in other words, we have by these

publications been made aware of 700 species of animals, known now as permanent residents or occasional visitants, the existence of which in Ireland was previously unrecorded.

These papers evince on the part of their author accurate observation, nice discrimination of species, care in the noting of all details, and a scrupulous desire to give to others their due meed of acknowledgment and obligation. It is no wonder, therefore, that they should have been highly prized by the naturalists of these countries, and that many of them should have been translated and republished in foreign journals.

Being aware of these circumstances, it was with peculiar pleasure we heard some time since that Mr. W. Thompson was about to collect into one systematic work the papers which had been appearing at intervals through a period of many years ; that he was about to give them the advantage of his own careful revision, to arrange them on a uniform plan, and to embody those additional facts which the lapse of time had placed within his reach, or which the proper exposition of the subject might seem to demand. This labour has in good earnest been commenced, and the first volume now lies before us. We wished to make our readers fully acquainted with the design as a whole, and with the spirit and contents of that portion of it which is now completed ; and we felt we could not more effectually prepare them for our communication, than by this brief reference to the previous labours of our distinguished countryman.

The present volume treats only of birds, and those of only two orders, the *Raptores* and *Insessores* ; or, in other words, of the birds of prey and the perching birds. It is stated in the preface that “ the volumes on birds are put forward merely as supplementary to the several excellent works already published on British ornithology.” Hence, as the necessity for specific details regarding form and plumage does not exist, they are omitted, except in birds of rare occurrence, such as the “ rose-coloured pastor.” We could have wished in some instances that names and dates could have in like manner been dispensed with, or more sparingly introduced, for they sometimes break the continuity of the style and of the narrative. On the other hand, it is but fair to remark that they form a portion of the evidence for the facts adduced, and on them must the value of the record in some cases depend. Perhaps a little more of condensation, and a more frequent use of foot-notes, might do all that is desired.

We have another suggestion to offer. We think that the

interest attaching to the occurrence of some of the rarer species might have been greatly enhanced, to the generality of readers, by the addition of a few particulars respecting their usual range, in what countries they "most do congregate," and by what habits they are distinguished. Having offered these two suggestions for the candid consideration of the author in his future volumes, we frankly own there is but little else in the contents of the book at which we can justly cavil; and we turn to what is the more pleasant part of our editorial duty.

Viewed with reference to man, birds present many interesting matters for consideration. They are greatly affected by those modifications of land, of water, and vegetable growth, brought about by the agency of human labour. On this subject Mr. Thompson remarks:

"I have remarked this particularly at one locality near Belfast, situated 500 feet above the sea, and backed by hills rising to 800 feet. Marshy ground, the abode of little else than the snipe, became drained, and that species was consequently expelled. As cultivation advanced, the numerous species of small birds attendant on it, became visitors, and plantations soon made them inhabitants of the place. The land-rail soon haunted the meadows; the quail and the partridge, the fields of grain. A pond, covering less than an acre of ground, tempted annually, for the first few years, a pair of the graceful and handsome sandpipers (*Totanus hypoleucos*), which, with their brood, appeared at the end of July or beginning of August, on their way to the sea-side from their breeding haunt. This was in a moor about a mile distant, where a pair annually bred until driven away by drainage rendering it unsuitable. The pond was supplied by streams descending from the mountains through wild and rocky glens, the favourite haunt of the water-ouzel, which visited its margin daily throughout the year. When the willows planted at the water's edge had attained a goodly size, the splendid kingfisher occasionally visited it during autumn. Rarely do the water-ouzel and kingfisher meet 'to drink at the same pool,' but here they did so. So soon as there was sufficient cover for the water-hen (*Gallinula chloropus*), it, an unbidden but most welcome guest, appeared and took up its permanent abode; a number of them frequently joining the poultry in the farm-yard at their repast."

The *distribution* of the species throughout Ireland is told in a few brief but discriminating words placed at the heading of each chapter, immediately under the name of the bird, and readily catching the eye, both by situation and by the size of the type employed. The author has travelled over a large portion of the Continent of Europe, and always with his observant powers on the alert. Hence he has been enabled to record the appearance

in foreign localities of many species which in our minds are associated with thoughts of home. It is pleasant to find these feathered denizens of our woods and plains occupying a wider range of territory than in our home-cultured notions we had thought fit to assign to them.

"I have heard," says Mr. Thompson, "the call of the cuckoo in the king's park at the Hague, towards the end of May, and in Switzerland, late in June. Its well-known cry was most gratifying to my ear, when (on the 16th of May) riding over the bare wild hills and through the forest between Constantinople and the picturesque village of Belgrade,—once the residence of Lady Mary Wortley Montague."

In like manner the occurrence of the jay is mentioned in Switzerland, that of the hoopoe at Aix-la-Chapelle; and several species as alighting on board the *Beacon* when in or near the Morea. Such notices, brief as they are, now and then awaken a host of classic associations. Take as an example the words: "The ruins of Rome are, as may be supposed, a fine locality for the white owl. From the Coliseum, tomb of Cecilia Metella, &c., I have startled it from its mid-day repose." Such in fact is the influence of such scenes, that the author now and then forsakes the didactic style of composition for one more in unison with the glow and beauty which he describes. Thus:

"I have had the gratification of seeing the bee-eater in scenes with which its brilliant plumage was more in harmony than with any in the British Isles. It first excited my admiration in August, 1826, when visiting the celebrated grotto of Egeria, near Rome. On approaching this classic spot, several of these birds, in rapid, swift-like flight, swept closely past and around us, uttering their peculiar call, and with their graceful form and brilliant colours proved irresistibly attractive. My companion, who, as well as myself, beheld them for the first time, was so greatly struck with the beauty of their plumage and bold, sweeping flight, as to term them the presiding deities over Egeria's Grotto. Rich as was the spot in historical and poetical associations, it was not less so in pictorial charms; all was in admirable keeping:—the picturesque grotto, with its ivy-mantled entrance and gushing spring; the gracefully reclining, though headless, white marble statue of the nymph; the sides of the grotto covered with the exquisitely beautiful maiden-hair fern in the richest luxuriance; the wilderness of wild flowers around the exterior, attracting the bees, on which the *Merops* was feeding; and over all, the deep blue sky of Rome completing the picture."

The *migration* of birds, that mysterious subject, about which so many have written, and which no one can be said fully to

understand, receives its due share of attention, and the times of arrival and of departure are noted with great care. Never have we seen the different species of swallows described with the same fulness as here; we have the haunts, the habits, and the aspect of each. In point of interest and novelty we do not know that any fifty consecutive pages of the work can be regarded as superior to this portion; and we make this remark after a careful perusal of what many will regard as the most popular portion, that which treats of the eagles and falcons. The snowy owl had, we knew, been occasionally taken in Ireland, but that it had been seen at any time or place in large flocks, and as a migratory species, was a fact for which we were not prepared. The passage in which the evidence is detailed (p. 102) is too long for extract; we must, therefore, refer our readers to the work itself. And if once they get hold of the volume, we think they will not readily lay it down; for while it contains the precise information which the ornithologist demands, it brings forward topics which are both of popular and scientific interest, such as the geographical distribution of species, the causes which seem to operate on their increase and decrease, their migrations, their uses to man, the occasional injuries they inflict, and the important benefits they confer. We may add to this that habits are dwelt upon in a manner so amusing, that we have known extracts from the book to be read aloud to a delighted circle of children. The story of the pet magpie, p. 334, is replete with humour; and that of the three robins, "Cresty," "Terry," and "Big-eye" (p. 167), is so admirable a piece of animal biography, that it is worthy of being placed along with that of the poet Cowper's three hares. The magpie story is by a learned Irish professor, who has not, 'mid his scientific research, lost his native relish for "fun;" and the history of the robins, we are glad to say, is from the pen of one of our fair countrywomen.

While Mr. Thompson was embellishing his work with those interesting anecdotes of birds, illustrative of their manners, habits, affections, and profundities, it is to be regretted that he did not still further increase its value,—to the Irish reader certainly, perhaps to all his readers,—by giving some account of the superstitions attaching to many of our well-known birds. Thus, how much may be written on the superstitions connected with the raven, the magpie, the robin, and the cuckoo. In the instances of the wren and the swallow only has he alluded to this subject.

There is another topic, arising out of the foregoing, to which

we are glad to find Mr. Thompson's attention has been directed; that is, the Irish names for our native animals. We know that several of those names are very significant, often expressive of the peculiarities or habits of the creature, and could easily be procured from the Irish-speaking peasant or the Gaelic scholar. In the vast collection of Irish manuscript literature now undergoing examination we find frequent mention of the animals proper to this country in former times, and many curious mythical legends attached to them. It would, in our opinion, add to the completeness of the author's labours if he would investigate this subject. Some years ago Mr. Eugene Curry, one of the first Irish scholars of the day, discovered, among the Irish manuscripts belonging to the Royal Irish Academy, a very curious zoological and topographical poem, believed to be as old as the fifth century, in which our animals are enumerated. The history of it is this:—The celebrated Irish champion, Finn Mac Coole is made prisoner by Cormac Mac Art, monarch of Erin, who, however, consents to liberate him for a ransom of two of every wild animal in Ireland, which were to be brought to him to the green of Tara. Cailte, one of Finn's officers, undertook and succeeded in this apparently hopeless task, and in the poem alluded to related to St. Patrick the result of his mission. A brief notice of this tract was communicated to the Royal Irish Academy by Mr. Ball, in February, 1844, but we have not heard anything of it since. We know that Mr. M'Adam of Belfast possesses another and a most perfect copy of this poem, and we are sure he would willingly assist his townsman in the investigation of the Irish names. Many of the names of animals recorded in this very ancient manuscript are now unknown, but no doubt several could be recovered if the subject was thoroughly investigated.

Mr. Thompson promises "to furnish a carefully drawn up list of the Irish names of native birds, for the concluding volume." We confess we should rather see them introduced into the text, both of the succeeding volume and all future editions of this.

The space we have devoted to this volume tells, more plainly than any commendation we could employ, our high appreciation of its merits. It is a standard work, and will naturally rank with those of our first ornithologists. We trust that "The Birds" will ere long be completed, and that the success of that publication may secure to us the continuance of the entire series; so that all the materials which the author has for a quarter of a century been collecting with such ceaseless assiduity may be secured for the permanent advancement of sci-

entific knowledge, and for the honour of that country whose Fauna they are so well fitted to illustrate.

The work is very well "got up," but we think the publishers have placed rather too high a price upon it; we trust the succeeding volumes will be cheaper.

Pathology of the Human Eye. By JOHN DALRYMPLE, F.R.C.S.
London, Churchill. 1849. Small folio. Fasc. 1.

"THERE are no diseases to which our bodies are liable, more important than those affecting the organ of vision; none whose speedy relief is more essential to the comfort and usefulness, nay, even to the safety of the patient, or which require more intelligent diagnosis, greater decision of treatment, and more thorough medical information. Thus, though ophthalmic maladies have, to a certain extent, been made *specialities*, yet in all times have they attracted the attention of the most eminent of our general physicians and surgeons, and within the present century have been almost wholly wrested from the hands of the empiric. It will not, therefore, be a matter of surprise that our medical literature should have been enriched by systems and treatises especially devoted to this branch of surgery, and that the most distinguished authorities in medicine should have contributed their quota to the general stock."

The foregoing observations form the opening paragraph in the introduction to the most truly valuable work upon the pathology of the human eye which has yet appeared in Great Britain, perhaps we should not be asserting too much if we said in Europe. The author says:

"It is not within his meaning to publish a *treatise* on diseases of the eye, but rather to exhibit them as they occur in nature, in a series of drawings, with such explanations as shall identify them with symptoms, and with the general treatment of the case."

Before we enter upon an examination of the merits of this great work, it may not be uninteresting to our readers to lay before them a brief outline of the history of the class of literature to which it belongs. The impossibility of conveying by language, however forcible, or descriptions however graphic, the appearances produced by disease have rendered pathological illustrations necessary; and hence the many splendid works, both general and special, upon that subject, aided by all the research of modern investigators, and every improvement afforded by art, which have appeared during the present century. While the outlines of anatomical structure and form

generally were painted and engraved by some of the great masters of these arts upwards of a hundred years ago, the subject of the eye did not escape investigation; and the *Descriptio Anatomica Oculi Humani Iconibus illustrata* of Zinn, of Gottingen, remains to the present day a monument of the knowledge, truthfulness, and skill of those engaged in bringing out that standard work. At that period, however (1755), engraving had reached great perfection, and artists of considerable merit were employed upon anatomical works. Nothing surpassed Zinn's plates, till the elder Sæmmerring produced his splendid work, *Icones Oculi Humani*, at Fränkfort, in 1804; and this was, we believe, the first book in which coloured illustrations of the eye were given. Engraving minute subjects, some from drawings made with the assistance of the microscope, like those expressed in Sæmmerring's book, is a tedious and consequently expensive undertaking; but in course of time the discovery of lithography enabled publishers and artists to produce illustrations of anatomical and pathological works by a much shorter and less expensive process; therefore our attention is next directed to Arnold's *Icones Organorum Sensuum*, brought out in 1839, which, besides possessing great softness of execution, also affords the results of the microscopic investigations of that day; but in many respects it is inferior to its great prototype. Many other minor works might be referred to, but these are the three great standard authorities during the last hundred years.

Up to the beginning of the present century literally nothing had been done to illustrate the diseases of the eye, as those who look at the rude representations given in the works of the elder Wenzel can assure themselves. The first attempt at improving this branch of knowledge, and rendering art subservient to science, would appear to have been made by Antonio Scarpa, in the second plate to whose large quarto work we have as faithful a delineation of a few eye diseases as it was possible to convey by an uncoloured engraving. To James Wardrop, of Edinburgh, we are indebted for the first, and for many a year the best coloured engravings illustrative of ophthalmic pathology (*a*). The first volume of his *Essays on the morbid Anatomy of the Human Eye* appeared in 1808, and the second volume, exhibiting some improvement in art, came out ten years later. There is, however, a want of distinctness about them which renders them incapable of comparison with more modern productions.

In 1813 appeared the first, and four years later the second vo-

(*a*) Why has the School of Edinburgh produced so little on ophthalmology since the days of Wardrop?

lume of Joseph Beer's great work, *Lehre von Augenkrankheiten*. The coloured engravings attached to this book were decidedly the best illustrations of the pathology of the human eye which had then appeared; and as far as they exhibit the marked characteristics of certain diseases, and assist our differential diagnosis, they have not been surpassed until now. To illustrate this position, we might point to the drawings of pustular ophthalmia, pannus, and dislocated lens, &c. They had also the advantage of having been drawn by the great German oculist's own hand, and "worked off" under his immediate eye. They are, however, defective in being too much reduced, and also from being, in several instances,—in the endeavour to work out the views of their author,—too defined, particularly in the vascular arrangement and colour, consequently, not true to nature. Several followers of the Viennese professor, and pupils who had studied at his clinique, subsequently produced monographs as well as systematic works, and some of these were illustrated; in particular, we may specify the handbook of Heinrich Weller, of Dresden, which was printed at Berlin in 1819. But many of the plates are evidently copies from Beer, and do not possess anything like the force of the originals.

The English works of Ware and Gibson did not contain coloured illustrations; but in 1811, and as a second edition, in 1816, Dr. Farre produced and edited the posthumous work of the distinguished John Cunningham Saunders, *A Treatise on some practical Points relating to the Diseases of the Eye*, to which are attached several coloured engravings, which, though not very valuable as works of art, are evidently true copies of disease. A few years later, in 1820, appeared Mr. Travers' *Synopsis of Diseases of the Eye*, also with coloured illustrations, a shade better than those in the work of the former author. Several of them were drawn by the same artist; but others, and the most graphic, were from the pencil of a medical artist, "a gentleman whose accurate knowledge of anatomy adds," says the author, "greatly to the value of his elegant talent for delineation." In 1814 appeared Sir William Adams' *Practical Observations on Ectropion and Artificial Pupil*, &c.; but the drawings in that work did not much advance our knowledge of the subject, nor elevate our art. Somewhat in the same category, at least as far as the style of illustration is concerned, may be classed the illustrations attached to Mr. Vetch's *Practical Treatise on the Diseases of the Eye*, which appeared in 1820.

We must now pass to the Continent again. Heretofore Germany, Italy, and England, alone contributed to the illustration

of ophthalmic pathology. At this period, however, the French school seems to have been aroused from its apathy or indifference towards this branch of medical science, and Demours produced his celebrated *Traite des Maladies des Yeux*, embellished with fifty-one coloured plates, illustrative of the different diseases of the eye, which appeared in 1818. Honoured be the French Government, ever foremost to advance science and art; this, the first systematic treatise upon the pathology of the eye, which gave a complete set of engravings, came out under the special patronage of Louis XIV., and was paid for by the State. These beautifully coloured engravings far surpassed those of Beer as works of art; and indeed, in the delicacy of handling, softness of touch, and general approach to nature, many of them came down unchallenged to the present time. No pains or expense was spared upon them, and they possess the very great advantage of not being over-crowded on the page. This work of Demour's stands alone in French medical literature.

Mr. Guthrie's *Treatise on the operative Surgery of the Eye* (1823), and then the observations on the *Ophthalmia, accompanying the secondary Form of Lues Venerea* (1824), by Mr. Hewson of this city, appear next in the chronological order of illustrated ophthalmic writings. The coloured prints attached to those productions were by the same artist, but with the exception of a single figure in the latter, they did not come up to the illustrations in any of the English works referred to, and were far inferior to that of Demours. Indeed, there are some figures in Mr. Guthrie's books which may possibly have been drawn from, but could scarcely have been coloured from nature.

In 1836 the Societe Medico-Pratique of Paris awarded Dr. Von Ammon, of Dresden, their prize medal for the best essay upon iritis. His dissertation on the subject, which was published two years later, was illustrated with two coloured plates, giving eighteen enlarged views of the iris in various states of the disease or its consequences. The drawing of these may be correct, but certainly the colouring is anything but natural. The great facilities, however, which Dr. Ammon enjoyed for studying and procuring illustrations of the diseases of the eye, arising out of his official capacity as physician to the Ophthalmic Hospital and the Blind Institution of Dresden, enabled him to prosecute his researches with effect; and accordingly, in 1838, appeared the first volume of his large folio work, *Klinische Darstellungen der Krankheiten und Bildungsfehler des Menschlichen Auges*, which was completed in 1841. When we inform our readers that that great work contains fifty-two

folio copper-plates, with 965 engravings of the diseases or national or congenital peculiarities of the human eye, nearly all of which are coloured, they may form some idea of the magnitude and extent of the work. Although it is very much more extensive, and in many respects the drawing and colouring possess more force than the work of Demours, still in several points of artistic power it is inferior to its French forerunner. Overcrowding the page (sometimes there are as many as twenty-six figures on one plate), and in some instances, unnatural colouring, are its chief defects; but as it was a private speculation, cheapness was obliged to be taken into account. In it as well as in that of Demours, there is no fair representation of the iris given, therefore no matter how well or how forcibly the particular morbid appearance was portrayed, the eye did not, as a whole, seem true to nature; it wanted life and expression.

It would not suit the subject in hand to enumerate the various monographs and systems upon the eye which have appeared during the last ten or fifteen years, both in Great Britain and on the Continent; nor could we find space to describe their illustrations, discuss their respective merits, or enumerate their defects. We may, however, specify four, all illustrated in the same way, and two of which are well known to English readers; those of Tyrrell and Morgan in London, and Sichel in Paris, because they appeared near the same time, and are illustrated in the same manner by coloured lithographs. Those attached to Mr. Tyrrell's book are decidedly the nearest to nature, but are very poor and meagre specimens of art either in colouring or drawing; while those of Mr. Morgan's work we look upon rather as diagrams illustrating the various forms of disease, which a man might draw from the description he read in a book, than any attempt to produce a similitude of nature; and the French illustrations, both in size, drawing, and colouring, are quite beyond our comprehension, and, consequently, all criticism upon them would be superfluous. The fourth and last work is Mr. Wharton Jones' "*Manual of Ophthalmic Medicine and Surgery*:" the salmon-coloured steel engravings in which, being only "partly from nature, partly copied with *such alterations* as he [the author] considered necessary to render them *more correct* and illustrative," are very well in their way, and may assist the student or grinder, but afford no information to the practical surgeon, although both may find some difficulty in recognising "*Sclerotic Staphyloma*" in fig. 2, plate III. of that book.

We have entered into this history of ophthalmic illustra-

tion, its merits and defects, for two reasons:—first, to point out how much a good book of the kind was required, and, secondly, to contrast that now under review with the foregoing, works, and to show how far it has avoided the errors we have endeavoured to point out.

We do not introduce Mr. Dalrymple as a young aspirant after fame; he has already attained the highest position in his profession, both as a well educated surgeon and an operator; but, above all, he is a man of general scientific acquirements, literary research, artistic taste, and great practical experience. His work upon the anatomy of the eye is one of the very best that the student can consult, and his various essays and papers upon the diseases of the eye, published in the periodicals during the last ten or dozen years, stamp him as a man of no mean powers of observation. For many years past he has been surgeon to the London Ophthalmic Hospital, the most extensive field for investigation in England. During his connexion with that institution he procured a vast collection of drawings of morbid eyes, and his colleague, the late Mr. John Scott, having bequeathed to him his valuable collection, he has commenced the "*Pathology of the Human Eye*," the first fasciculus of which work has just appeared, consisting of three lithographic plates, drawn by Mr. Bagg, printed with great care by Hullmandel, and coloured by hand under the superintendence of the author, himself an artist. To each plate is attached some letter-press descriptive of the figures, and giving a short, succinct account of the diseases which they are intended to illustrate, together with some general remarks upon treatment, &c. This portion of the work is not intended as a system of ophthalmic medicine, but merely illustrative of the drawings; of which each plate contains six.

For accuracy of drawing and effect of colouring, as well as general truthfulness to nature, nothing of the kind has yet appeared equal to them. Having thus far expressed our honest opinion of their merits, we may be allowed to make one or two remarks, not for the purpose of qualifying the opinion we have expressed, but as suggestive to the artists employed on this great work. We think some of the figures, particularly in Plate III., rather feeble; they want force both of drawing and colouring. We also think the "light" in the eyes rather too marked and spear-shaped; indeed, for our own part, we do not think it would be any deficiency to omit this artistic touch altogether.

Upon another occasion, when the work is more advanced, and when we shall have an opportunity of discussing the

written opinions of the author as well as the graphic illustrations of the artists, we shall again refer to it; in the mean time we recommend it to the attention of the profession, and cannot but express to Mr. Churchill our meed of approbation for the splendid manner in which the book is "brought out." We only wish it could be made a little cheaper; but if men do not choose to study the diseases of the eye when students, we suppose they ought to pay for the next best mode of acquiring a knowledge of them when practitioners.

A Treatise on the Pathology, Diagnosis, and Treatment of Neuroma. By ROBERT W. SMITH, M. D. T. C. D., M. R. I. A.
Fifteen folio plates; pp. 30. Dublin, Hodges and Smith.

IF we compare the advantages which have accrued to medicine, or, indeed, to any science of observation, from systematic works, no matter how learned they may be, with those which belong to monographs, we must admit that to the latter class the greatest value is to be attached; for we may safely say that every monograph from the pen of an experienced observer is a distinct addition to our previous knowledge, and a defined step in advance. The number and quality of such works issuing from any school of medicine may be taken as a fair test of its character and success. It is, therefore, with great satisfaction that we notice the magnificent book now before us, which in its aim and execution may fairly claim to be the first in the class of Irish medical monographs. The great opportunities which the author has long enjoyed, and his character as an accurate and unprejudiced observer, would in themselves draw attention to this book, which supplies a want long felt, of a comprehensive work, from an original observer, on the singular disease of neuroma, an affection but little known to practical men, and often overlooked or misunderstood even by experienced surgeons. The annals of medicine, even from an early period, furnish us with isolated observations of this disease; and we have to thank Dr. Smith for the bibliographical record of contributions to the history of neuroma, now for the first time furnished, which gives references to about eighty observers, most of whose names are of admitted authority. Of these essays but few can claim the title of distinct and comprehensive monographs. The essay by Mr. Wood, published in the *Medico-Chirurgical Transactions of Edinburgh*; and the thesis of Alexander Knoblauch, *De Neuromate et Gangliis Accessoriis Veris*, published at Frankfort in 1843;

that of Aronssohn, *Observations sur les Tumeurs développées dans les Nerfs*, printed in Strasburgh, in 1832; and of Alexander, *De Tumoribus Nervorum*, printed at Leyden, in 1810; may be taken as the principal works on this disease. Isolated cases and descriptions of the malady, introduced into general books on pathology, constitute nearly the whole of the remaining literature on the subject.

We have placed the memoir of Mr. Wood first on the list, as it is the only monograph on the subject in our language, and is distinguished by sound views and an absence of any speculative tendency. Most of Mr. Wood's cases are extracted from preceding authors; but he has added some excellent original observations. The thesis of Knoblauch, though exhibiting the research so characteristic of German medical literature, adds but little to our previous knowledge, with the exception of an important case communicated to him by Chelius, and another observation of the disease by Bischoff. To this author we shall return, with reference to the opinion strenuously combated by Dr. Smith,—that we may consider one of the forms of this disease as nothing but the development or original formation of true accessory ganglia.

Let us take a general view of this extraordinary disease, to which we can find nothing analogous in pathology. Under conditions, the nature of which is as yet completely hidden from us, tumours varying from the size of millet seed to that of a man's head, which, though differing in form, have still a certain generic resemblance, are produced in the nerves, engaging both the cerebro-spinal and sympathetic systems, and in some cases becoming developed in vast numbers, while in others but a single tumour exists in the entire body. They may be accompanied by the most dreadful suffering, or exist even in great numbers without ever causing neuralgic pain, the patient being either unaware of their existence, at least from any painful sensation, or only experiencing the annoyance consequent on their bulk, or pressure on surrounding parts; and it appears that the greater the number of tumours the less is the liability to suffering. Seated within the sheath of the nerve, and enveloped by a capsule which appears to be the external neurilemma, they neither, according to our author, present the marks of inflammatory origin, nor any characters of heterologous deposit. Once formed they may increase in size, but they neither suppurate nor contract any intimate adhesions with surrounding parts. The neighbouring lymphatics are not contaminated by them; and the state of the general system may be

perfectly healthy, having no analogy to the cancerous or tuberculous cachexia.

But the catalogue of singularities does not end here; for it is found not only that they may exist in many hundreds, probably thousands, in the same individual, and yet produce no pain, but that they do not even cause paralysis of motion or sensation.

The ordinary seat of the disease is in the nerves, after they leave the cranial or spinal foramina. But in one instance, as in that communicated by Bischoff to Knoblauch, tumours were found within the cranium, at the origins of most of the cerebral nerves; and Dr. Smith has recorded a unique case of neuroma of the Casserian ganglion, in which severe neuralgia of the branches of the fifth pair, but especially the inferior and superior maxillary nerves, was produced.

We have as yet but little information as to the effect of the development of neuroma in the ganglionic system. The cervical, thoracic, and semilunar ganglia, the solar plexus, and other parts of the sympathetic system, have been found deeply engaged in the disease; but we do not find that any peculiar symptoms of visceral disease occurred in these cases. Schiffner has found this condition in connexion with cretinism, but that it is a common one in idiocy we have reason to doubt. In the case by Bischoff, the patient, a lunatic, died of gangrene of the lung with pleuritis; and in the example recorded by Dr. Smith, there is nothing special in the mode of death that could lead us to distinguish it from that in other instances where no such disease of the nerves existed. It is to be regretted that the author, after his detailed account of the pathological condition of all the great nerves in this case, does not also give that of the thoracic and abdominal viscera with the same minuteness. Dr. Smith's researches, however, leave us to infer, that no special pathologic state of the viscera is produced in these cases.

But what is the nature of this singular disease? Microscopic examinations only reveal a fine fibro-cellular structure, having no character in common with any form of carcinoma with which we are acquainted. The author gives two finely executed representations of this areolar structure (see Plate XV. figs. 11 and 12), and states that, after the most minute examination, he has failed to discover any character of cancer, or any trace of nervous matter in the tumour. While we fully agree with the author as to the distinctive character of this disease, we cannot help observing, that the progress of

microscopical anatomy may throw additional light on the matter. Remakius, in giving the examination of a tumour removed by Dieffenbach, observes:

“*Neurilema commune telam cellulosam et pauca tantum vasa demonstrabat. In sequentibus stratis rete vasculosum amplificabatur, juxta fibras cellulosas proprium quoddam fibrarum genus et prope ad schirrum solidum corpora quoque rotunda granulata, substantiæ cerebri cinereæ omnino simillima, et corpora pellucida caudata, corporibus embryonis nervorum similia, inveniabantur*”(a).

The singularity of this affection has naturally led to various speculations as to its nature. Is it a malignant disease analogous to cancer, but specially affecting the nerves? Are these tumours examples of hypertrophy of the nervous cords themselves; or are we to agree with Knoblauch, that where they exist in great numbers they may be considered as true accessory ganglia? With respect to the first of these doctrines, we have already alluded to the author's opinion. We shall now give in full his observations on the differential diagnosis:

“The malignant tumours are occasionally found involving the trunks of the nerves, but the true neuroma is, I believe, a disease of a benign character. Bayle, Cayol, and other eminent pathologists, have stated that it is identical with scirrhus; but the following considerations induce me to agree with those who maintain the opposite opinion:—

“1. To whatever size the tumour may attain, or however long it may have existed, we do not find that it affects the surrounding tissues otherwise than by its pressure; it never converts them into a texture similar to itself; the form alone of the nervous trunk with which it is connected is altered, its component fibres being separated from each other and flattened: it contracts no intimate adhesion either to the contiguous textures or to the integuments, which can be freely moved even over the largest tumours; nor does it affect the lymphatic glands, either in the vicinity or at a distance.

“2. It does not exert that specific and destructive influence upon the constitution which forms so remarkable and so constant a feature in the history of cancer; it is true that the general health of the patient is frequently impaired, but this is to be ascribed in such cases to the continued suffering which he endures, and not to any specific reaction upon his system.

“3. The disease does not recur after the removal of the tumour, either in the part originally affected or elsewhere. Whether the tumour (when of spontaneous origin) has been extirpated, or the operation of amputation performed, the patient has been in every instance permanently relieved from suffering. How different is this

(a) Romberg, *Lehrbuch d. Nervenkrankheiten*, 1. Berlin, 1840.

result from the melancholy consequences of operations undertaken for the cure of malignant disease.

“ The case recorded by Liston does not tend to establish the malignant nature of neuroma; it was an instance of medullary tumour in the popliteal space, involving the posterior tibial nerve; but, as remarked by Knoblauch, ‘ has formationes heterologas neuromatum nomine appellari nolumus, quum nihil cum istis commune habeant et imprimis quoad medendi rationis successum tantopere ab iis differant. Dentur his nomina ipsa propria, ut etiam Strukius casum a se observatum fungum medullarem nervi mediani nominat.’

“ 4. The character of the pain which accompanies neuroma is totally different from that which distinguishes cancer.

“ 5. The structure of neuroma, as revealed by the microscope, presents none of the characters which are supposed by modern pathologists to be diagnostic of malignant disease.”

The author does not claim originality for all these diagnostics, some of which have been given by preceding observers. It is important, however, that he should be able to corroborate the opinions of Knoblauch, who has laid stress on the non-contamination of surrounding parts, and the fact of the disease not returning after operation, as proofs of its benign character. Yet while we admit that the author's views, in addition to those of Knoblauch, go far to establish the non-malignancy of neuroma, we must not forget that the comparison of internal and external cancers exhibits some remarkable differences, and, therefore, that in contrasting neuroma and carcinoma we must, with respect to the latter disease, take all its forms into consideration, and not limit our view to external cancer. Thus neuroma is often a painless disease; but so is visceral cancer, as when the disease occurs in the liver, the lung, or mesentery. Neuroma exhibits no tendency to ulcerative or suppurative action, and this is not uncommon in hepatic and even pulmonary cancers. Again, the diseased mass forms no intimate adhesions to surrounding parts; but how often do we see carcinoma of the lung or abdominal viscera covered by a perfectly transparent and non-adherent serous membrane? And with respect to the preservation of the general health, at least until the last stages of the case, this too may be observed in cancer. For we have seen patients die of some ordinary acute disease, up to the invasion of which their health had been excellent, and yet on dissection important organs were found filled with cancerous matter.

To us it appears that the great argument (exclusive of microscopical evidence) against the cancerous hypothesis in neuroma, is the fact of the disease being confined to a single structure; the want of proof of any infection of the blood; and

the success which attends operation in cases of single neuro-matous tumours.

To a superficial observer the doctrine that the disease consists in an irregular hypertrophy of the nerves would seem specious, and be further strengthened by inspection of the Plates attached to the work before us. In most of them we see not only tumours of various sizes connected with the nerves, but also that the nerves themselves appear continuously enlarged, and this, in some instances, to an extraordinary degree. Thus, in the second Plate, we see a tumour of the sciatic nerve ten inches in its transverse, and eleven in its vertical diameter; while the nerve itself, a short space above the tumour, is more than an inch in width.

The careful dissections of the author, however, have established beyond a doubt, that the tumour protrudes from among the apparently enlarged nervous cords; and that these in their turn, as well as the nerve above and below the tumour, owe their great volume not to real hypertrophy, but to the distention of the sheaths of the fibrillæ by a substance of the same nature as that which constitutes the mass of the well-defined tumour.

We have already alluded to the opinion of Knoblauch, that in the cases where numerous tumours of nerves exist, they may be considered as examples of an original vice of conformation, in fact as true accessory ganglia. The author meets this view by the detail of two cases, which, whether we consider the extraordinary extent of disease exhibited, or the minute and accurate examination to which the systems of nerves were submitted, may be safely held to be without parallel in the history of medicine. And if anything was wanting to complete the value of these contributions, it will be found in the splendid illustrations, in life size, from the pencil of Mr. Connolly. Both these cases occurred in the hospitals of the House of Industry, and in both the subjects were adult males. Though differing in some particulars, they present a singular similarity. We must refer to the work for these extraordinary cases, to the anatomical description of which the author has dedicated not less than five of the large folio pages of his book. All the nerves of the extremities, together with the pneumogastric, phrenic, and intercostal nerves, were engaged. Upon the first of these cases Dr. Smith observes:

“ In this remarkable case the total number of tumours existing upon the nerves, which were removed from the body, exceeded 800; they presented a striking uniformity, both in their external charac-

ters and in their internal structure; their form was oval or oblong; their colour a yellowish white; they were solid, and each surrounded by a capsule, which was continuous with the neurilemma; their surface was smooth; their long axis corresponded with the direction of the nerve upon which they existed, and they were only moveable from side to side. Their section exhibited an exceedingly dense, close texture, of a whitish colour, and somewhat glistening aspect, presenting a uniform degree of solidity, and remarkable for a total absence of vascularity. Examined by the aid of the microscope, they were found to be composed essentially of a fibro-cellular structure, the fibrous tissue predominating in by far the greater number, the areolar preponderating in a few; the fibres were arranged in bands or loops, amongst which permanent oval or elongated nuclei became apparent on the addition of acetic acid. In no one instance out of the numerous specimens examined was there any trace discovered of nerve-tubes, nor any indication whatever of the presence of any of the structures considered by modern pathologists as characteristic of malignant disease."

The second case was even still more remarkable. Upwards of 1400 tumours were removed along with the nerves; and the author declares that there would be no exaggeration in stating the aggregate to be at least 2000. There was nothing abnormal observed in the nervous centres.

The following case is important, as being conclusive against the doctrine of original formation of these tumours. It was communicated to the author by Dr. Henry Kennedy.

"A gentleman, about forty-five years of age, of active habits and vigorous constitution, consulted the late Mr. Colles, sixteen years ago, respecting several small tumours which had formed upon his legs and arms; they were not painful nor the source of any inconvenience. Mr. Colles, although he confessed that he knew not their cause, and was equally ignorant of any mode of treatment by which they could be removed, except by operation, informed him that they were not of a serious nature, or likely to produce any impairment of his general health. He merely recommended a course of tonic medicines, and a strict attention to diet.

"From that period to the present time the tumours have gradually increased in number, but have not become much larger than they were when the attention of the patient was first attracted to them; the only one which increased to any considerable extent was one which he endeavoured to reduce by pressure: it ceased to grow as soon as he abandoned the attempt. At the time of the formation of each tumour he experiences a remarkable feeling of general irritability, as well as a peculiar sensation in the part, somewhat resembling a rheumatic pain; but he cannot always, from mere sensation, refer this trivial uneasiness to the exact situation of the tumour;

indeed the latter is generally formed before his attention is attracted to the part. Their number at present amounts to about sixty; they are principally situated upon the inside of the limbs, are solid, moveable from side to side, and not in the slightest degree painful; they appear at very uncertain intervals, and none of them have ever diminished in size.

“The patient himself is of opinion that the primary cause of their formation is indigestion, as he always suffers from derangement of the stomach and bowels, and great acidity, for some time previous to the development of each tumour; he also finds that exposure to wet, very warm clothing, or sitting long near a hot fire, have a tendency to induce their formation. No medical treatment has ever appeared to exert any influence over them; some are as small as duck-shot, others are one inch in length and half an inch in breadth; they are principally of an oval form, their long axis being parallel with the nervous trunks.

“If the cases just described be compared with those which I have extracted from the memoir of Knoblauch, it will be scarcely possible to avoid arriving at the conclusion that they must all be considered as belonging to the same class, and that in all the nature of the tumours was identical. I have already alluded to the opinion entertained by this author, that such tumours are not the results of a morbid process, but of an original vice of conformation,—that they are, in fact, true accessory ganglia. The three cases, however, which I have detailed, are in opposition to this opinion, for here the successive development of the tumours could be traced, and the periods of their origin in several instances assigned, while in none of them could any trace of nervous structure be detected. These circumstances appear to me sufficient “pour faire écarter l’analogie, séduisante au premier abord, mais en réalité trompeuse, qu’on a été tenté d’établir entre ces renflements morbides et les véritables ganglions nerveux normaux.”—p. 19.

The detailed account of the symptoms of neuroma, with original researches on the disease when affecting the ganglionic system; an important section on traumatic neuroma; and the author’s views as to the surgical treatment of the malady, constitute the remainder of the work. Dr. Smith has chosen for his motto the words of Cruveilhier, “l’Anatomie pathologique des nerfs est encore à faire;” but this book may well justify us in the opinion, that a continuance of the author’s researches will soon place the pathological anatomy of the nerves on a level with that of the remaining structures of the body.

We cannot conclude without expressing our satisfaction at the manner in which this splendid work, which must mark an era in Irish medical literature, has been brought out; and we would especially notice the beauty and accuracy of the Plates, from the masterly pencil of Mr. Connolly. We are not ac-

quainted with any other series of anatomical drawings which combine at once so much of truthfulness, boldness, delicacy of handling, and artistic feeling.

Practical Remarks on the Use of the Speculum in the Treatment of Diseases of Females. By THOMAS R. MITCHELL, M. D., F. R. C. S. I., &c. Dublin, Fannin and Co. 1849. 8vo. pp. 83.

DR. MITCHELL commences his essay with the following sentence, and in the opinion it contains we entirely concur:

“I look upon the introduction of the speculum into general practice as one of the greatest improvements in the treatment of disease since the discovery of the stethoscope; and although some may feel inclined to give the palm to the uterine sound as the more valuable instrument, I confess that I am not of that opinion.”

Since the introduction of the vaginal speculum into modern practice, many comprehensive treatises have been written upon its varied uses, and the numerous diseases in the diagnosis of which it renders corroborative or indispensable aid. The work before us, however, does not pretend to so wide a range, as the author modestly informs us that his object is “merely to give, in as concise a form as possible, a few practical directions, illustrating the treatment, with cases.” In doing this he does not pursue any definite order or arrangement, but seems to notice the different subjects treated of as they occurred in his clinical lectures, from the notes of which this little volume is compiled. His observations do not extend to any of the malignant diseases of the generative organs, but are confined to those lesions which are of more common occurrence, and which daily present themselves to the attention of the obstetric practitioner.

After noticing most of the forms of the speculum usually employed at the present day, he states:

“The instruments that I am in the habit of using are Ricord’s four-valved specula, made of German silver highly polished, with running bolts to keep them distended when introduced.”

“Many practitioners disapprove of glass specula in consequence of their fragility. I have, however, used a strong glass one for several years without apprehension.”—p. 14.

Considerable experience has led us to prefer “Ferguson’s Speculum” to all others, for ordinary purposes; as it is not only portable and easy of introduction, but gives a much clearer

and more distinct view of the parts than any other yet invented. This last peculiar advantage results from its exterior being coated with looking-glass amalgam, so that its internal surface possesses a high degree of reflective power; outside of all is a coating of caoutchouc.

Dr. Mitchell expresses his decided opinion, that it is "by no means uncommon" to find inflammatory or ulcerative disease of the womb in *unmarried* females; and he gives a case in illustration. He further remarks:

"I have stated that the virgin uterus is occasionally the seat of disease; and care should be taken to ascertain the existence or absence of the hymen; as I do not think a practitioner would be warranted in employing the speculum if the hymen exist. In the few cases in which I have used it, that membrane was absent, a circumstance I have very frequently found accompanying disease of long continuance."—p. 19.

Our experience certainly may not be so extensive as Dr. Mitchell's; but we must confess that, with one or two exceptions, we have never seen a case where the symptoms justified the employment of the speculum in a chaste unmarried female; and in connexion with this we would direct the reader's attention to the significant fact above quoted, of Dr. Mitchell's not having found the hymen in those cases where he used the instrument. It is our firm persuasion that a recourse to the speculum in virgins is never warrantable except in cases of extreme urgency, or where there is unequivocal evidence of the existence of uterine disease requiring ocular inspection, or the direct application of remedial agents; and under these circumstances the presence of the hymen should scarcely deter us from making the examination. We feel and speak strongly upon this point, as we fear that the claims of female delicacy may be disregarded by inexperienced advocates of the speculum; and it has more than once fallen to our lot to see young single females, of unblemished character, in whom psoas abscess and spinal disease had been mistaken and treated for inflammation of the cervix uteri, in consequence of which there was induced (to say the least of it) a highly nervous and irritable state of the whole system, that very much favoured the development and hastened the progress of the real malady. We have long thought that the cause of medical science and medical ethics would be much benefited by a monograph from some competent observer, on the "abuses of the speculum."

With reference to the frequency of retroversion of the womb, and the use of the uterine sound,—subjects intimately

associated with the name of Professor Simpson, of Edinburgh, —our author thus writes:

“ Although my experience on the subject has been pretty extensive, having used the sound in a great number of cases lately, I have not been able to detect one where the uterus was retroverted; although I could with facility retrovert it with the instrument.”—p. 25.

The solution of gun-cotton, now so much employed by surgeons for varnishing raw surfaces, has proved in Dr. Mitchell's hands a valuable adjunct to our list of remedies for treating ulceration of the os uteri, and one which he claims the merit of having first introduced to the notice of the profession.

Upon the subject of uterine leucorrhœa, Dr. Mitchell puts forward some rather novel views. For many reasons which we need not quote, he thinks that there are two species of the disease; one in which it is situated in the cervix, and the other in the fundus and body of the uterus. Proceeding on the statement of M. Chassaignac, that the secretion in the fundus uteri is acid whilst that of the cervix is alkaline, he passes into the cervical canal a catheter having a free extremity, armed with a stilette to which is attached a piece of litmus paper, and then protrudes the test paper to permit of its being moistened by the discharge; and when time has been allowed for this it is retracted into the catheter, and the whole instrument withdrawn. According as the paper is reddened or not, he infers the disease to be situated in the fundus or cervix. At a later page he observes, “ that in many cases in which I used the litmus as a test, it had returned unchanged, proving that the discharge was natural.”—p. 58. Such a result (which, be it remarked, is admitted to occur in many cases) would clearly render the above hazardous procedure worse than useless; and even supposing the differential diagnosis to be established, what practical advantage is thereby gained? To this question let our author reply:

“ It will be observed that I have spoken chiefly of the disease when the cervix uteri has been affected, but I have found a similar treatment of great value in those cases where the fundus was decidedly its seat.”—p. 54.

Now we would ask any candid man, is it not trifling with the health and confidence of a patient to thrust such an instrument as that above described into the uterine cavity, on the chance of obtaining an indication which, after all, exercises little or no influence upon the great question of treatment?

In common with Dr. Evory Kennedy(a), Dr. Bennett, and others, Dr. Mitchell regards ulceration of the os uteri as a not unfrequent cause of abortion and sterility; but maintains that when it coexists with pregnancy it appears subsequently and not prior to conception.

In conclusion, we must compliment the publishers of Dr. Mitchell's treatise on the manner in which the binding and typography of the volume are executed. We wish it were in our power to say as much for the accompanying illustrations; but, whether through fault of the artist or engraver, they certainly cannot be regarded as specimens of the present state of this department of printing in colours.

A short Sketch of the Life and Writings of the late Joseph Clarke, Esq., M. D., Vice-President of the Royal Irish Academy, and formerly Master of the Dublin Lying-in Hospital, &c. &c., containing minute Results of his private Practice, extending over a Series of forty-four Years, including 3878 Births. By ROBERT COLLINS, M. D., President of the King and Queen's College of Physicians in Ireland, formerly Master of the Dublin Lying-in Hospital, &c., &c. London, Longmans. 1849. 8vo. pp. 88.

It was our intention, in following up our Biographical Memoirs, to have presented our readers with a portrait, and a sketch of the life and writings of the distinguished Irish physician, Joseph Clarke; but Dr. Collins having, with much better effect, taken upon him that task, it remains for us but to give an analysis of the work before us, and to quote from it such extracts as will furnish our friends with the usual information given in our Biographies.

This work may be divided into three parts: A brief autobiography; an account of the latter years of Dr. Clarke, together with several letters from his correspondents; and a most interesting and valuable account of his private practice "during the lengthened period of forty-four years, including the unexampled number of *three thousand eight hundred and seventy-eight births*," the results of which, as regards both mothers and children, are detailed. "This I look upon," says the author, "as indeed a

(a) See his paper entitled "Practical Observations on some congestive, inflammatory, and ulcerative Affections of the Uterus," in the third volume of this Journal. Though Dr. Mitchell nowhere alludes to this valuable monograph, still we think that, coming from such a source, it could hardly have escaped his notice.

record of the utmost value to the profession, presenting them, as it does, with a description of information nowhere hitherto promulgated, and well deserving of their serious attention."

Joseph Clarke was born in 1758, in the county of Londonderry, and has left the following account of his early life:

"I was a second son, and very early in life showed a great disposition towards school learning. At the age of twelve, I was put to a Latin grammar school, being then a good English scholar, clerk, and arithmetician. I remained nearly five years with a curate (Kearns), who had been educated in Trinity College, Dublin, and was always reckoned one of the best scholars of my standing. After reading Euclid's Elements, my grand-uncle, by the mother's side, Dr. Maconchy, of Dublin, recommended Glasgow College to me for the study of Logic, Mathematics, Latin and French, each of which I prosecuted with industry and sensible improvement, in the winter of 1775 and 1776. Thus prepared, I went to Edinburgh for the three ensuing years, where I studied medicine with a regularity and zeal exceeded by none. In September, 1779, I graduated with great ease to myself and some reputation. Soon after my return to Ireland, I visited my friends in Dublin, where I received a pressing invitation to remain some time in Dr. Maconchy's house. Having spent about three months in this city, much to my satisfaction and advantage, I determined to leave it, with the intention of settling as a physician in Derry. A friend being in pursuit of commendatory letters to forward me in this object, heard of a companion being wanted to accompany Mr. N. L. Rowley's second son to the Continent, whither he was going for the improvement of his health. Having been fortunate enough to obtain this appointment, I set out on the 3rd of March, 1780, for Lausanne, in Switzerland, where we spent the summer months very pleasantly, while Mr. R.'s health was tolerably good. In October, however, such a change had taken place, as made it necessary for us to return to London, where I availed myself of the opportunity thus afforded me of attending Dr. William Hunter's spring course of lectures, which included those on the gravid uterus, and from which I derived several useful hints and practical cautions. In May, 1781, Mr. Rowley died, upon which I returned to Dublin. During my absence, my respectable and worthy grand-uncle, Dr. Maconchy, died; his successor and my uncle, George Maconchy, Esq., kindly offered me accommodation in his house; and many friends advised me to think of settling in Dublin, in the accoucheur line, by which branch of the profession Dr. Maconchy had realized a good fortune. Among my advisers on this occasion, the most strenuous was Dr. George Cleghorn, one of the oldest and most intimate of Dr. Maconchy's friends. From him I then, and often after, received very sound and useful lessons. No man knew Dublin better, and few could so readily direct a professional man as to the manner by which its inhabitants were to be pleased. When I decided on attempting a settlement in Dublin, my property was in-

considerable. From my father I was entitled to between £400 and £500. Most of this had been spent on education. A balance of £160 was the residue of my patrimony. To this I may add £100, presented by the Rowley family on my return, with many compliments and professions of friendship. Of my allowance while abroad, I had not saved more than £20. On the 11th of July, 1781, I entered a pupil, in the Lying-in Hospital, and on the 28th of March, 1783, was appointed Assistant to the Master (Dr. Rock), for both of which I paid him 100 guineas, so that my cash was now very low. In June, 1783, through the mediation of my friend, Counsellor John Dunn, I received and accepted a proposal to go abroad with John Jacob, Esq., of the county Tipperary. His health was bad, and his mother wished him to see a little of the Continent. My companion being in love with a Miss Gahan, to whom he was afterwards married, contrived to shorten his intended absence. We returned, in August, 1784, to Ireland, and, after visiting Killarney, and spending some weeks in Munster, I resumed my station of Assistant in the Lying-in Hospital, on the 14th of September following. By this excursion I acquired much valuable information, from visiting the London and Continental Hospitals, gratified a great deal of curiosity, diminished somewhat my youth (which is adverse to professional progress), and saved of my allowance £240. Once more, then, I felt myself independent. On the 11th of April, 1785, I was admitted Licentiate of Physic in the College of Physicians, for which I paid £30 5s. 5d. On the 7th of April, 1786, I married Isabella Cleghorn, niece to Dr. George Cleghorn, with whom I got a fortune of £1500; and on the 3rd of November following, was elected to the Mastership of the Lying-in Hospital.

“Such are the most material circumstances of my history that I can at present recollect; they are thrown together in haste, yet they may, at some future period, serve to gratify the curiosity of some near relation, or assist my own recollection of past events. The registry of my practice will, in future, afford the best continuation of this sketch.”

Dr. Collins next gives some account of the Cleghorns, who were in succession Anatomical Professors to the University; but as we intend to devote a separate memoir to these distinguished physicians, a large portion of whose unpublished writings is now in our possession, we pass over this part of the work, and continue our quotations from Dr. Collins's memoir of his distinguished relative:

“At the very commencement of Dr. Clarke's professional pursuits in Dublin, he was called upon by Professor Cleghorn to assist him in the Anatomical School in Trinity College, to the interests of which he felt himself most ardently attached. Dr. Cleghorn had at this time retired from private practice, and resided chiefly on his estate in the county of Meath, about sixteen miles from town. Every

letter to Dr. Clarke, however, contained the most anxious inquiries about College affairs. In one, dated Kilcartey, December 18, 1787, he writes to Dr. Clarke:—"I shall always acknowledge my obligation to you, for the ready and willing assistance you gave me in carrying on the lectures for those three years past."

"Dr. Clarke having, by the excellent method of conveying instruction, acquired considerable character, ceased to lecture in Trinity College in the year 1788. His last division of his profits, in July of this year, was £60 7s. 7d. He had been elected Master of the Lying-in Hospital in November, 1786, and his facility as a lecturer in this department of his profession has been stated, by those who had the benefit of attending him, to have excited great admiration."

The philanthropic labours of Dr. Clarke, in procuring a better system of ventilation in the hospital, by which an immense amount of suffering and mortality was prevented, are already well known to our readers(*a*); so we pass on to another benefit which he conferred on this country, one especially connected with the Dublin school of medicine:

"On Dr. Clarke's succeeding to the mastership of this noble charity, a new era was established, one worthy of grateful remembrance, from the incalculable benefits this institution, through his instrumentality, has been made ever since to confer upon his professional brethren and the public, by the creation within its walls of a school of instruction, unequalled in any similar institution in the world. No previous master had adopted this truly wise measure of lecturing in the hospital, and thus extending far and wide the unlimited good this institution was calculated to afford as a school of practical midwifery. Even at this early period Dr. Clarke had acquired considerable reputation in this capacity; and I am fully authorized, by several professional friends who had the advantage of attending him, to state that he was universally admitted to be one of the most lucid and agreeable lecturers they had ever heard, and that he possessed, in an eminent degree, the happy facility of making his class clearly comprehend that which he wished to convey. On the establishment of this admirable school, he at the same time caused a registry to be opened, in which were recorded each pupil's name and address on entrance; and if, at the expiration of the term of his attendance, after a careful examination held by the master and his assistants, he was found to have acquired that information which, from the extensive opportunities he enjoyed, he should have done, he was given a certificate to this effect, signed by the master, assistants, and registrar of the hospital, the date of which was also entered."

"His income from practice rapidly increased, until it reached £3000 yearly, from which amount for many years it varied but

(*a*) See the Transactions of the Royal Irish Academy, vol. iii.

little. By accumulation, &c., his receipts, within the first twenty years, approached £5000 annually, and this solely by his own exertions.

"In the early period of his life he was a tall, slightly made man, and the fatigue of so laborious a profession was occasionally too great for his bodily strength; so much so, that at times when returning to his home at night, after considerable exertion, he has told me, if he walked a short distance he was obliged to rest himself on the way from pure exhaustion. On one of these occasions of debility he sent for Dr. Harvey (a well known physician in Dublin), to advise what he should do, and, after detailing to him his inability for so much work, &c., &c., Dr. Harvey asked him abruptly, 'What do you eat for dinner?' and 'what do you take after it?' 'Indeed,' replied the Dr. (whose appetite was but indifferent), 'I sometimes take a little mutton broth, with a little boiled mutton, and at other times chicken. I take very little wine, or occasionally a little drop of spirits in water.' Dr. Harvey replied, 'Phew—nonsense, man; take your roast mutton and roast beef, with a pint of good port wine daily, and you will be as stout a man as any in the kingdom.' 'I took his advice,' said the Doctor; 'I speedily improved, and enjoyed excellent health afterwards.' He certainly did not take so much as Dr. Harvey's allowance of wine, but he took it much more freely than he had previously done. He was always a man of temperate habits; he took, I should say, as nearly as possible, half a pint of wine daily; this, from my own knowledge, I can state to have been his habit for the last twenty-five years of his life, during which I dined in his company almost daily, and for seventeen years of which I enjoyed the utmost happiness under his roof. His practice was almost entirely confined to the upper ranks of society, and, consequently, he got large fees, as may be inferred from the statement that, in fees varying from £10 up to £150, he received £37,252.

"In his Fee Book, November 11, 1801, where £1 (note) is entered, he adds, 'First of these vile productions.' The old gold guinea, of the value of £1 2s. 9d., Irish currency, was the usual fee previously, so that the innovation was far from agreeable to physicians."

The opportunities for advancing medical science afforded by his appointment to the Lying-in Hospital were not lost on Dr. Clarke, as evidenced in a number of essays on various subjects published by him, and also a very valuable condensed abstract of the hospital while under his care, giving in detail all the remarkable occurrences met with during the treatment of every patient admitted, amounting to 10,387 cases. This was the first report of the institution ever published, and paved the way for that more enlarged and highly instructive one subsequently given us by Dr. Collins, the author of this memoir.

To the practical physician and accoucheur, however, the

great value of the volume now under consideration consists in its furnishing a minute detail of all the occurrences of interest observed in Dr. Clarke's private practice, extending over a period of nearly forty-four years, during which time he attended 3847 cases, and that too with an amount of success rarely, if ever, met with. The deaths from all causes were but twenty-two in number, being in the proportion of 1 in 175 deliveries:

“ And when we examine into the cause of death in the twenty-two cases recorded, we find that there were three from peritonitis, five from phthisis, one from hectic fever, one from scarlatina, one from a paralytic stroke, one from diarrhœa, one from dysentery, and one from anomalous disease; thus leaving eight deaths as the results of child-birth, or in the proportion of one in 477.”

This is indeed worthy of attention, and should make us anxious to discover how he was enabled to conduct so vast a number of cases to so happy a termination. He evidently was no admirer of the forceps (having used it but once, and that ineffectually), possibly from the abuse of this instrument, as well as the lever, which he found to prevail when he came into practice in this city; still he had *not a single instance of death resulting from laborious or protracted labour*.

The various complications are given under distinct headings, and will be found well deserving a careful perusal; affording the means of comparing the statistics of private practice with those of hospital, and thus furnishing materials from which may be deduced many interesting conclusions. The appearance of this volume at the present time seems opportune, as it may serve, in some measure, to repress the onward movement in favour of artificial interference in obstetric practice, which would seem to be the characteristic of the present day.

The correspondence on various subjects with different distinguished practitioners in London and Edinburgh will be found particularly interesting; especially the letter of Dr. Sims, which gives a detailed account of the labour and lamented death of her Royal Highness the Princess Charlotte, being the only authenticated account of that catastrophe published. Dr. George Cleghorn's letter, at page 23, should be read, and the advice it gives treasured, by every man in the profession, young and old.

The work concludes with a history of the last illness and death of Dr. Clarke, which occurred in Edinburgh, in 1834, where he had gone to read a paper before the British Association.

The voluminous extracts we have made show the estimation in which we hold this little work, which is written in a simple and unostentatious style, but evincing in every page the

deep admiration of the author for his revered relative, to whose memory it is dedicated. It is very well printed, and we only wish Dr. Collins had presented his readers with an engraving of Dr. Clarke, which could have been done at a comparatively small expense, and would have added much to the interest of the book. In the board-room of the Lying-in Hospital there is a very good portrait of Dr. Clarke, by Oregan; and also in the same institution a posthumous bust, by a lady, which we know to be an excellent likeness: either of these would have answered the purpose.

Thus far have we expressed our opinion honestly, and we trust consistently, of Dr. Collins as an author, and of the work which he has just produced. We have now to address him in another capacity, that of an Irishman and President of our College of Physicians, and also as one of the Council of the Royal Dublin Society, an institution established for the advancement of agriculture, arts, and manufactures, *in Ireland.*

The book, which we have now reviewed, bears the London imprint; our esteemed friends, the *long* house of Longmans, have had the honour of its birth, and the gas-lights of Paternoster-row first dawned upon its entrance into life. Thus it would appear from the title-page, but on turning to a little black line on the back of the title we find that it *was printed in Dublin, and sent to London to be published!* Surely the memoir of the distinguished Joseph Clarke, penned by the present President of the King and Queen's College of Physicians in Ireland, a gentleman so highly esteemed in this city, and so favourably known to every practical physician in Great Britain, did not require the stamp of the London market to make it saleable!

Do we then advocate exclusive dealing? By no means; a man has a right to sell his book, as he does his merchandize, in the dearest market. In the present pressure of affairs we might, perhaps, ask an author to be patriotic enough to offer his produce first to a merchant in the country from which he derived his income, and if that merchant or that bookseller would not give the same liberal price which could be got elsewhere, we think that he had done all that could be required of him. If, however, an author prints a book at his own expense, we think he is bound to give the £15 or £16 which it may cost to the distressed and unemployed printers in the country in which he resides. But has not this been the case, it may be asked, in the work before us? It is true it has, but in practical effect it were nearly as well that it was not so, for by *publishing* the book in London, and affixing to it the

name of a publisher not residing in this country,—a book too printed, bound, and the paper of which was made here, thus in every respect manufactured in Dublin,—it deprives the Dublin printer of the benefit of the name and extension of his manufacture. Just as well might the Belfast linen merchant stamp his cloth with an English mark. If we are not capable of supporting a national literature in Ireland, neither should we be allowed a national College of Physicians. Does it increase the prestige of the Dublin school of medicine, or even uphold its reputation, to send its literature to another country for publication? Practitioners may rest assured of this, that in proportion to the fame and influence of their school will be their own receipts.

Now, in making these remarks, we do not mean the slightest disrespect to our esteemed friend Dr. Collins, whose philanthropy is unquestionable, and who has ever upheld the honour and dignity of the medical profession in this country; but we have chosen this opportunity for laying before the profession in Ireland our opinion on this subject, as well as the state of the publishing trade at present in this kingdom. Neither can we be accused of allowing our nationality to get the better of our judgment, or in any way to bias the tone and spirit of our review of English printed works; in confirmation of which we might refer to several highly laudatory notices of the printing and illustration of English works, which have appeared in almost every number of this Journal. Our attention is, however particularly called to the subject from the state of the Dublin printing trade during the past two years. There are now in this city nearly 400 working printers, about 60 of whom are at present totally unemployed; and during the last two years from 100 to 150 were generally out of work. Our printers subscribe to a fund for the relief of their unemployed brethren, and so great was the destitution among the trade lately, that this tax amounted to a much larger sum, in proportion to their receipts, than that paid in England on incomes over £150 a year; and several of our printers were obliged to emigrate at the expense of the body during the past year.

We have just been handed a work entitled, "What's to be done for Ireland?" *printed* and published in London, by an Irish "late Assistant Poor Law Commissioner." We know an Irish bishop too—formerly a Fellow of our University—who prints his Charges to his Irish clergy at his own expense in London. What a pity such persons cannot derive their income from the people they employ. We have a "Dublin Review," forsooth, which is altogether printed, published, bound, and mostly

written in England. We are not sure, however, whether it advocates Irish manufactures; practically it condemns them.

The printing and book trade has been a flourishing manufacture in Ireland for a very long period. Where is there a better contemporaneous edition of Shakspeare, as far as correctness and accuracy in the text, or in printing, paper, and "getting up," than that of Thomas Ewing, brought out here in 1771. Indeed "Ewing's Editions" of works printed at that period are justly celebrated for their accuracy and the excellence of their typography. We might also refer to several works—the folio "Pillar" edition of the "Universal History," for example—printed in Dublin by George Faulkner in 1744, to establish the same position. And in the present day, are the Transactions of the Royal Irish Academy, the works of the Irish Archæological and Celtic Societies, the Annals of the Four Masters, Petrie's Round Towers, Dr. Kennedy Bailie's Greek Inscriptions, Wakeman's Antiquities, the works of Dean Graves, the Census, or the work of Dr. Smith on Neuroma, which has just appeared, inferior to any printing of a similar class in Europe?

In the foregoing observations we must not be misunderstood. We are contending for a principle, not merely specifying a particular work. There are other works we shall have to deal with ere long, to which these remarks apply even more than to that just considered. It appears to be the fashion now to send over medical works to England, not merely for publication but for printing also. Do our Irish authors fancy that by printing and publishing their books elsewhere they are thereby conciliating or bespeaking the favour of the London reviewers? If they do they very much mistake the character of these gentlemen.

It is true there might have been a time, when the compact of the "Row" was all powerful, before West End booksellers broke up that joint stock company, and before we had Irish periodicals to defend our literature,—when men were afraid of having their books tried by their merits, without the passport of the London mark; but surely the day is past when an author need fear to cross the Stygian ferry of criticism without a cockney obolus in his mouth.

Report of the Medical Officers of the Dublin Metropolitan Police, for the Year 1848, with Returns in connexion therewith. Dublin, Thom. 1849. Folio, pp. 15.

SINCE the establishment of our city police force the medical officers attached to that body, Dr. Ireland and Sir A. Clarke, have published annually a report of their experience of the diseases to which the men are liable. Of these valuable records the present is the eleventh, and, as presenting a tolerably accurate statistical return of the effects of a peculiar employment on the health of a number of individuals, is of equal importance with those which preceded it. We speak of the Report as being only *tolerably* accurate, for our professional brethren in Dublin well know the unwillingness on the part of policemen, when ill, to apply to their own medical officers for advice. This arises from the very reprehensible system that exists of immediately reducing the pay of any of the men who may be reported sick, thus punishing the unhappy individual for a visitation of Providence. Hence they invariably apply in the first instance to some private practitioner, or try to struggle through their illness as long as they can at all do so. Thus, in a note to one of the deaths on record, it is stated :—

“ This man had been quacking himself for some days before the doctors saw him, and when visited by them was in a very bad state with quinsy.”

As regards the venereal disease, especially, no reliance can be placed on the return, for the harshness of the rule by which the men, when reported to be thus affected, are discharged from the service, forces them to conceal their illness. Thus it will be found that out of the entire body, consisting of upwards of 1100 men, but ten are reported to have had the venereal disease in 1848, and but one in 1847. We fear, however, that no words of our's will have any influence in causing this heartless and cruel system to be altered, when we find its advantages put before the inhabitants of our city in the following extract from the Report before us, in words savouring more of the political economist than of the humane physician :

“ The medical officers have annexed to this Report a return exhibiting the sick in a financial point of view, from which it will be found that, so far from the medical department, salaries and cost of medicine included, being any expense to the public, it is a fact that, after deducting the sum incurred in the support of it from the amount of stoppages made from the pay of the sick, a balance remains available *for other purposes* of the police establishment.”

Thus, if a vigilant policeman, during the most severe weather, instead of skulking under an archway, exposes himself during five or six hours of the night to the rain and storm, in order to protect the lives and properties of the citizens, and thereby contracts an inflammation on his lungs, he is punished for it by the loss of his pay. Monstrous! This must be reformed. If policemen malingers, let them be dismissed; but let not the well conducted be made to suffer. Why is there not an hospital for the Metropolitan Police?

We may be told that the same system of stoppage of pay, in case of sickness, is the rule in the military service. But how stands the case? The foot soldier receives a shilling a day. Out of this, after paying for his living and all other incidental expenses, he has about two pence to spend. Should he get an attack of sickness, he is immediately provided with every hospital accommodation, nourishment,—even the most costly,—and attendance, for which he is charged ten pence a day, not in addition to, but instead of the regulated charge for his diet, &c., when in health. Thus, he has still his two pence as before, so that he actually does not lose a single farthing of his pay. But the unfortunate policeman, often burdened with a wife and children, is mulcted in a shilling a day, without receiving any equivalent in the way of diet, lodging, or other medical appliances, except medical attendance and medicines, unless, indeed, he be charitably admitted into some of our public hospitals. We again repeat, the system *must* be altered: is a metropolitan policeman inferior to a soldier?

There are some other points in this Report which relate more immediately to medical science, and one or two of which we notice in all good feeling, chiefly with the view of their correction for the future. The nosological arrangement adopted is altogether in defiance of the modern improvements in medicine, and exhibits a curious jumble of diseases. We would suggest to the compilers of the Report the use of that of the Registrar-General of Births, Deaths, and Marriages in England. Many questions are touched upon by the medical officers, which have little or no connexion with the subject, and which might lead those who were unacquainted with these gentlemen to imagine that they were introduced merely with the view of amplifying their subject. Thus we have a lengthened disquisition on the political state of Ireland last year, coupled with a laudation of the powers that be (all proper, it must be supposed, in a Government document); and an official announcement that the contagion of cholera is a disputed question, the dispute being attended with much good, but not requiring any opinion from the medical officers of the Dublin metropolitan police.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

MEDICAL MISCELLANY.

Postscript to MR. MOORE'S Paper on the Coagulability of Human Milk.

SINCE the passage at page 286 of the present Number of this Journal was printed, in which I suggested that the great coagulability of the colostrum might be a provision intended to compensate for the weak coagulating power of the stomach of the newly-born infant, I have met with a paper published by Dr. John Davy, on the colostrum of the cow(*a*), in which he remarks, that "its easy coagulation may suit it to the stomach, in which, probably, the gastric juice at first is in small quantity and feeble." Dr. Davy did not find the colostrum of woman to coagulate when heated, but he states that the trials he made of it were few. As I have already mentioned, I found some specimens to solidify on the application of heat, like white of egg, while others became converted into curds and whey; but as this property often continues but for a very short time, in order to succeed with the experiment the colostrum should be taken as soon as possible after lactation commences. Had Dr. Davy experimented on a greater number of specimens, he would, I am sure, have obtained the same results as I have done, and have included human colostrum in the explanation I have just quoted from him.

Being anxious to ascertain the duration of this coagulable state of the colostrum, I applied to Dr. Edward L. Ormerod, whose residence in the Dublin Lying-in Hospital gave him peculiar opportunities of deciding the question. Dr. Ormerod was good enough, with the kind permission of the Master of the Hospital, Dr. Shekleton, to undertake a series of observations on the subject, with the results of which he has furnished me. In the first case examined, where lactation commenced thirty-eight hours after delivery, in eight and a half hours

(*a*) Medico-Chirurgical Transactions, vol. x., London, 1845, p. 90.

after the commencement of lactation the colostrum continued to solidify on the application of heat, and at the end of thirty-two hours a few coagula were formed when heat was applied. In the second case lactation commenced seventeen hours after delivery, and the milk continued capable of solidification by heat for nineteen and a half hours. In the third case lactation did not commence until ninety-two hours after delivery, and the milk tested twelve hours subsequently was not coagulable by heat. In the fourth, lactation began at the time of delivery, and in thirty-two hours after heat rendered the milk half solid. In the fifth a free secretion of milk took place twenty-three hours after the birth of the child; the milk was solidified by heat at the end of twelve, and still curdled at the end of fifteen hours. In the next case the flow of milk took place at delivery; at the end of twenty-eight hours it solidified; at the end of thirty-one hours it remained fluid when heated. The seventh patient examined had milk three days before delivery; thirty hours after delivery it curdled when heated; at the end of thirty-five hours it remained fluid. In the eighth case the milk, which commenced to flow in six hours after the birth of the child, was scarcely curdled twenty-eight hours subsequently. In the ninth the milk was scarcely coagulated eleven hours after the commencement of lactation, which took place twenty-two hours after the birth of the child. In the tenth case lactation commenced fifty-four hours after delivery, the milk examined half an hour afterwards solidified by heat; three hours after it scarcely curdled.

From the foregoing observations I think it is most probable that the first milk secreted after parturition by the human female is always capable of solidification by heat; in those cases in which this effect was not produced, the milk was not examined until a longer period had elapsed after the flow commenced than that during which this property continued in the tenth case. So far as the present observations go, the duration of the state of coagulability does not appear always to depend either on the amount of the secretion nor on the period at which lactation commences. Dr. Ormerod informs me that in determining the latter the patient's report cannot be generally relied on. Some will say lactation has not commenced, while on examination the breasts will be found full of milk; and others will state the contrary when scarcely a tea-spoonful can be obtained.

This extreme coagulability of the colostrum evidently depends on the presence of albumen. Scherer supposes that the peculiar distinguishing character of casein (that of not being coagulated by heat alone) may be developed by a gradual more intimate and chemical union of the albumen with alkali(a). Perhaps the principle which is to form the albumen of the blood in the infant's system exists in the first milk in a state requiring less assimilation than that in which it occurs in the subsequent secretion. Berzelius

describes the casein of the colostrum of the cow, ass, and goat, as consisting of two substances, the one coagulable by heat, the peculiar casein of the colostrum—"colostrum casein"—the other (called by Chevallier and Henry "mucous matter") incoagulable by heat, ordinary casein(*a*).

With a view to determine the mode in which the coagulation of milk is effected by rennet, Berzelius performed the following experiment. He washed the mucous membrane of a calf's stomach very well in cold water, and dried it. He then placed a portion of the dried membrane in 1800 times its weight of skimmed milk, and gradually raised the temperature to 50° C. (122° F.), and kept it at this point until the coagulation was complete. This took place so perfectly, that only a mere trace of casein could be detected in the filtered whey. The membrane was then taken out, washed, dried, and weighed: it had lost but six per cent. of its weight(*b*). Berzelius remarks that even if the amount lost had entirely combined with the casein, the coagulation of the latter could not be explained by the addition of so insignificant a quantity, 30,000 times its own weight of milk having been coagulated by the portion dissolved.

In this experiment the coagulation must have been effected by the membrane acting as a ferment, and determining, with the assistance of the temperature employed, the conversion of a portion of sugar of milk into lactic acid, which, neutralizing the alkali of the milk, would cause the precipitation of the casein(*c*). On this subject Scherer remarks as follows: "That a portion of the sugar of milk is changed in the stomach of the child into lactic acid is very probable; that this change ensues, however, with all the sugar, we cannot admit, since the soda of the bile would in no case be sufficient for the neutralization of so large a quantity of acid: but a neutralization must take place, for an acid chyle cannot exist in the normal condition. The supposition of a complete change is inadmissible also, because it is well known that when once the coagulation of the casein has taken place, or, if we choose, when once a free acid is present, the conversion of sugar of milk into lactic acid will cease"(*d*).

The last-mentioned fact may be considered as a provision of nature to prevent the sugar being converted into a substance which would not only be less nutritious, but would even be absolutely injurious to the infant economy. The development of sufficient lactic acid to neutralize the free alkali of the milk probably takes place with great rapidity; and if free acetic acid exists in the gastric juice of the infant, as it does in that of the adult, the coagulation of the milk will be quickly accomplished.

Speaking of the effect of menstruation on the milk of nurses, Scherer remarks that it is sometimes injurious to the child, although frequently, as he has himself observed, no such injurious effect is

(*a*) *Thierchemie*, p. 709.

(*b*) *Thierchemie*, p. 680.

(*c*) *Carpenter's Physiology*, third edition, p. 668.

(*d*) *Op. cit.* p. 475.

produced, nor can any change be discovered in the properties of the milk. L'Heritier, he says, relates two cases in which children, previously quite healthy, were attacked with anasarca in consequence of using such milk, and he believed that this might be attributed to the greater serosity of the milk. Such milk, he continues, is also said frequently to render children pale and debilitated, and often to give rise to violent colic pains. D'Outrepoint, who quotes a similar case, found the milk during menstruation to resemble the colostrum(a).

Since the note to page 291 was printed, I have been informed by Mr. Sullivan, whose able Retrospect of the Progress of Chemistry appeared in the February Number of this Journal, that the casein of human milk has lately been subjected to analysis by Rochleder and another German chemist, and that the only difference discovered between it and the casein of cow's milk is some trifling variation in the quantities of the inorganic matters combined with it; the difference, in fact, appears to consist rather in the arrangement of the ultimate component particles than in any change of their relative proportions. This is, perhaps, what might be expected, for it is not likely that one variety of casein should differ more in its composition from another than it does from fibrine or albumen, and the ultimate composition of these three substances is, it is well known, nearly identical.

From insufficient observance of the context, I gave in the note to page 280 an incorrect version of the quotation made by Berzelius, of a statement of Simon's. It should have been rendered thus: "Its compounds with acids" (i. e. the compounds of human casein) "are in much greater number soluble in water" (than those of the casein of cow's milk). This is one of the conclusions I have drawn from my experiments.

It has been stated that skimmed human milk is incapable of spontaneous coagulation; a portion from which I carefully removed the cream in two successive layers, had, however, at the end of six days, formed a considerable coagulum.

Dr. G. O. Rees draws an interesting and instructive comparison between the composition of the milk and that of blood. Dr. Rees looks upon the casein of human milk as being incapable of forming insoluble combinations with the mineral acids(b).

In comparing ass's milk, in respect to the small quantity of cream it contains, with the filtered milk recommended by M. Donnè, it must be borne in mind that the former, probably in consequence of the large proportion of sugar of milk and extractive matters present in it, will often prove slightly laxative; and that, if administered to children while labouring under diarrhœa, it will increase the affection. Sir Henry Marsh informs me that this laxative property is

(a) *Wagner's Handwörterbuch*, vol. ii. p. 471.

(b) *Cyclopedia of Anatomy and Physiology*, vol. iii. Art. "Milk." London, 1847.

removed by heating the milk to about 212° . The mode in which he directs this to be done is, to keep the vessel containing the milk standing in boiling water until the desired temperature has been attained. Sir Henry likewise informs me that he has found ass's milk treated in this manner, with the previous addition of a small proportion of lime water, to form a most useful article of diet for children, even when affected with diarrhœa.

While these pages were passing through the press an opportunity was afforded me of examining a specimen of sheep's milk. In twenty hours after being drawn it was slightly acid, specific gravity 1.034; it was thick; had a rich, agreeable taste, similar to that of the cream of cow's milk; on standing it threw up a thick and abundant cream; in coagulability it resembled the milk of the cow and goat, forming a dense, firm coagulum when boiled with a very minute portion of nitric, hydrochloric, or acetic acid; a large excess of the latter redissolved the coagulum. Coagulation was also instantly produced by the addition of these acids when applied without heat.

I have already alluded to the kind assistance I have received from Dr. Sibthorpe. I am happy to have, in conclusion, an opportunity of thanking Dr. Ormerod for contributing his investigation of the coagulability of the colostrum. I regret that I was only able to give an abstract of the table he drew up for me, which contained in addition to what I have quoted, particulars as to the state of the patients, the amount of the secretion of milk, &c. To Mr. Sullivan, also, I am deeply indebted for free access to his valuable library of standard German chemical works.

A Case of complete Paralysis of the Motores Oculorum, caused by a Tumour within one of the Cruca Cerebri. By S. BROWNE, Surgeon to the Belfast Ophthalmic Institution.

ON the 26th April, 1848, James Townley, aged three years, was brought to the Belfast Ophthalmic Institution. He then presented the following objective symptoms: ptosis of the right superior palpebrum; considerable divergence of the right eye, with the pupil dilated permanently to a quarter of an inch in diameter. On the left side there was a very slight paralysis of the eye-lid. No divergence of the globe, and the pupil, though dilated to nearly the same extent as that of the right, was still active under the stimulus of light. The power of vision in both eyes seemed perfect at the distance of eighteen inches or two feet, and beyond, but the right eye could not distinguish minute objects, placed in its axis within ten inches. The child's appearance denoted the complete strumous diathesis, and also the effects of recent sickness; he seemed very delicate, and walked feebly, especially on the *left* leg. I learned from his mother, an intelligent woman, that he had been sickly from his birth; his dentition had been very protracted, not having cut a tooth until he was twelve months old, and that he had suffered very much during the period from convulsive attacks. When

about two years old he suffered very frequently from headaches and colicky pains. In the month of August, 1847, he had an attack of fever, which lasted three weeks; after that time he lost his appetite, and frequently exhibited unnatural drowsiness. However he rallied during the winter, and seemed better in general health than he had been before the attack of fever. Somewhere about the beginning of the year 1848, his parents first observed a peculiarity in his eyes, the right being especially remarkable. "It seemed to be half-hidden," as his mother expressed it, "and was apparently more prominent than the other, and showed more of the white of the eye." Early in the month of March he had another attack of synocha, all the family at that time labouring under the same disease. It was after his convalescence from that attack he was first brought to the Eye Dispensary, when he presented the symptoms I have already enumerated. Of course I at once diagnosed some disease of the brain at or near the origin of the third pair of nerves.

At that time he was ordered two and a half grain doses of calomel three times a day, with successive blisters to the nape of the neck, and occasionally on the temples. After he had taken two drachms of the calomel the system first became affected; it was then given in two-grain doses every night for about a month, when it was omitted, repeated blisters having been applied in the mean time. During the period of the treatment just stated, he evidently improved in appearance and strength; there was not then any paralysis of the left side, though, in lifting that leg, he seemed not to have complete control over it, as he moved it forward with a jerking kind of gait.

Though there was this evident amendment in his general health, the eyes did not improve in appearance, on the contrary the ptosis of the right side was nearly complete, the divergence of the eye so great (exhibited when the lid was elevated by the fingers) as to conceal a portion of the cornea behind the external canthus; the pupil was fixed and fully dilated, the iris presenting merely a narrow ring within the margin of the cornea. There was still, so far as could be ascertained, the same amount of vision in that eye as when he was first seen by me. The left eye had also become more affected, both in the paralysis of the upper lid, dilatation of its pupil, and divergence in its axis; there was also an evident diminution in the power of seeing objects. During the summer I occasionally saw the patient, observing little, if any, change in his appearance or symptoms.

For some months previous to the 16th of January, 1849, I had not seen the child, on that day his mother came to inform me that for the five or six weeks previously he had been gradually becoming worse. She stated that his appetite, which had all along been pretty good, had then failed; he began to totter very much in his gait, and to be quite drowsy and listless; his sight was, to use her expression, "very dim, as he stumbled over anything placed in his way." When I visited him next day I found him seated on

his mother's knee, and evidently insensible to external impressions, though a few days before he had spoken some words when addressed, but inarticulately. I observed that there was a constant motion of the tongue and lips, and chronic spasms of the left leg and arm; the right side was not affected in any way, save by an occasional twitching of the muscles of that side of the face; the breathing was hurried and laborious. The ptosis in both upper lids was complete; the pupils extremely dilated, and the right globe immoveably fixed and divergent; the left eye also diverging greatly, and occasionally agitated by a flickering movement of the muscles, at which time there was also an appreciable contractile action of the pupil. He lived for about ninety-six hours after I saw him, when he died in a slight convulsive struggle.

Autopsy.—Twenty-six hours after death I had an opportunity of making a minute examination of the brain and eyes, of which the following is a summary of my notes taken at the time. The head presented a well-developed cranium, the sutures being fully and firmly ossified; on removing the calvarium the dura mater presented a perfectly normal appearance, but upon opening it both surfaces of the arachnoid were dotted with small granular points as if of organized lymph, but very few adhesions were found to exist over the top of the hemispheres. The brain having been removed very carefully, it was observed that in the posterior and inferior portion of the anterior lobes there was the appearance of recent effusion of blood; that from the fissure of Sylvius around the chiasma of the optic nerves and forward on the base of and between the anterior lobes there was marked evidence of recent inflammatory action, with congestion, thickening and change of structure in the arachnoid and pia mater; the optic nerve seemed quite healthy in structure, as well as the optic tracts; the third pair of nerves were found much diminished in size, and changed into a soft pulpy structure of greyish matter, interspersed with fine streaks of a reddish hue; the right crus cerebri, at its escape from the pons Varolii, was observed to be more prominent than the left, and felt to the touch as if composed of a hardened mass; on removing a thin layer of the medullary matter, a very firm tumour of the size of a walnut was presented, this was found to have completely destroyed the right crus, save a thin medullary covering, while on its inner side it pressed upon the left crus, causing softening of it and of the posterior border of the corpus callosum; the quantity of fluid within the membranes and ventricles of the brain amounted to eight ounces. The tumour when weighed was found to be two drachms and forty-four grains, and was composed of firm tubercular matter, of homogeneous structure, and without any apparent nucleus. Its surface, however, presented a lobulated appearance.

The eyes, which I removed very carefully, were minutely examined. I observed before removing them that the pupils were dilated as fully as they had been during life; after they had been handled a little in the necessary manipulations while preparing them for dis-

section, I noticed that the pupil of the right eye had contracted considerably while the left remained unchanged. The structure of the left eye was quite healthy, the ciliary nerves being beautifully developed; indeed I have never had such a good opportunity of tracing the union of these nerves in the ciliary ligament, and their minute interlacing branches which supply the iris and ciliary body.

In the right eye I found all the coats and tissues perfectly normal, but it is worthy of remark that the ciliary nerves were not nearly so large as those in the left eye; some of the branches divided from the nasal portion of the ophthalmic division of the fifth. Besides being smaller, they were so soft as to render it impossible to trace them beyond the ciliary ligament. I may add that the retina of each eye was quite healthy, and easily divisible into its component layers.

Remarks.—This case is instructive and interesting in several points of view. It is probable that the disease commenced at a very early age, by a deposit within the right crus cerebri of the small point of tubercular matter, which gradually increased by successive deposits until it attained the large size which it exhibited after death. This tumour was evidently the cause of the several symptoms observed during the progress of the disease, and at last excited the inflammatory action with effusion, which closed the scene. Were such demonstration necessary, this case would fully illustrate the physiology of the third pair of nerves; it also, I think, clearly shows that contraction of the pupils is effected through them, and depends upon their being in a normal condition.

Of course it is clear that no treatment could have cured the disease, but it is probable that that which was adopted may have retarded its progress; and, I may presume, had the symptoms observed depended upon inflammatory action within or around the crura cerebri, it is certain that the treatment pursued was the only one likely to be followed by beneficial results.

Case of congenital Tumour on the Eye-ball. By J. I. TRAYER, M. D.,
Castlewood, Queen's County.

PATRICK KILBRIDE, aged 23, applied to me on the 4th of September, 1848, to have a tumour removed from the ball of the right eye.

On examination I found a yellow, granulated tumour seated on the right eye-ball, of a nearly semi-spherical form, and encroaching on the outer side of the cornea to such a degree that it covered about one-fifth of its area, and though not extending so far as to cover the pupillary opening, still by its prominence it obstructed so many of the oblique rays that the field of vision was materially contracted on that side; and when the patient attempted to look to the right, without turning his head, the right eye was nearly useless. This tumour was of such a consistency that, while it was slightly altered in form by the pressure of the lids, it still had sufficient firmness to protrude between them, and prevent their

being ever completely closed. It bore on its summit several hairs, about as strong as the eye-lashes, which became a source of constant irritation, obliging him to cut them short occasionally. The mass was evidently sub-conjunctival, and appeared to be equally firmly attached to the corneal portion of its site as to that of the sclerotic. It was also the point of convergence of several large vessels, especially one large cluster that came from the outer commissure of the lids.

This tumour was congenital, and the man gravely attributed it to the fact of his mother having been struck while carrying him with a "burr," one of those little, round, bristly beards of the burdock; and he dreaded much that the popular opinion might be too true which says, "for what is born with you there is no cure." This would be the more distressing, inasmuch as besides the deformity, which was considerable, and gave an unpleasant air to his whole countenance, this tumour, in virtue of its size, prevented a complete closure of the lids; and the hairs with which it continually irritated the conjunctiva, were every now and then the cause of more or less serious inflammations, which continually interfered with his work, and rendered his sight weaker after each attack. To the combination of the above causes I attributed the existence of a central ulcer of the cornea which existed at that very time, and which I endeavoured first to heal before I should attempt the removal, by operation, of its cause. This being attained by appropriate treatment in about three weeks (a time which will not appear long when it is remembered that the source of irritation still existed, and that the patient's living fourteen miles off prevented a very regular attendance on his part), I proceeded, on the 28th of September, to remove the tumour. This I effected by divaricating the lids by means of the spring speculum contrived for the operation for strabismus; then by fixing a tenaculum in the body of the tumour, and exercising a gentle traction therewith I carefully dissected off the tumour from its attachments to the cornea and the sclerotic, steering, as well as I could, between the two dangers of leaving too much to be removed by the subsequent use of the nitrate of silver (which I proposed to use), and of injuring, by too close cutting, the transparent cornea. The surface exposed by this process bled pretty freely, both from the conjunctival vessels above-mentioned, and from a great number of little vessels whose mouths gaped upon the wounded surface of the sclerotic. After this had completely subsided, I very freely applied the solid nitrate of silver to the whole surface of the wound, taking care not to go beyond this on the corneal side. I ordered a collyrium of borate of soda, and compresses, wet with cold water, to be constantly applied.

I found the tumour to be composed chiefly of fatty matter, but containing bands of a rather dense, fibrous-looking substance, and carrying on its summit about a dozen fine hairs.

On the third day after the operation he returned, beginning already to feel great comfort from the removal of this tumour. A slough had fallen off from the surface of the wound, and diminished

considerably the thickness of the lamina of fatty matter left by the knife. I now again applied the nitrate as before, and ordered similar applications of borax collyrium and cold water dressing.

I twice again, at intervals of a week each time, applied the solid stick of lunar caustic, and had the great gratification of seeing, on the last occasion, an immense improvement in the aspect of the organ. His sight gained daily in strength from the absence of the continual irritation to which he had been subject, and his field of vision had so much increased that he declared his right eye to be now as useful nearly as the other. The distance of this poor boy's abode, and the occupations of a farmer's life, prevented his coming to me again until February, 1849, when he came to show me his eye, and I was pleased to find that there remained scarcely a trace of his former deformity. On looking closely at the eye there is a barely perceptible nebula occupying the position of the ulcer, but so very slight that it does not interfere with his vision, which is now very clear; while on that part of the cornea occupied formerly by a portion of the tumour, it is all completely transparent, with the sole exception of a very delicate crescent-shaped nebula, existing at the extreme margin of the base of the tumour. This is so very slight that I expect it will (with the central nebulous appearance) either in whole or in part yield to a continued use of a collyrium of borate of soda and sulphate of zinc,—one of those unchemical combinations that experience has taught me to value in such cases, notwithstanding the apparent incompatibility of the ingredients.

Case of slow Action of the Heart in Fever. By CHARLES HALPIN, M. D.,
Cavan.

IN reply to the query in the Circular relative to the Fever Report, respecting the peculiar phenomena of the circulating system, Dr. Mease and myself, in our joint report on the epidemic fever of 1847, stated that we had met with “nine cases in which the heart's action ranged between forty and fifty beats in the minute, yet all those cases terminated favourably”(a).

Since that report was written I had an opportunity of treating a similar case in the County Fever Hospital: a short history of its course may not be uninteresting.

Ellen G——, aged 18, was admitted to hospital 2nd December, 1848. Pulse 96; skin hot; tongue dry, but clean, with considerable thirst; no headach. The fever ran its course mildly, and terminated, without appreciable crisis, on the eleventh day. On the 14th of December she relapsed; the skin became hot, and the pulse rose to 84. On the 15th it fell to 70, and continued to decline gradually but steadily until the 18th, although stimulants were given very freely. On the 18th the pulse was 42; 19th, 45; 20th, 46.

(a) Dub. Med. Jour., No. xiii., N. S., Feb. 1849, p. 116.

She took seven and a half ounces of whiskey each twenty-four hours. 21st, felt better, but pulse was 44 ; 22nd, 44 ; 23rd, 40. Ten ounces of spirits were again taken.

Dec. 24th. Pulse 40. Took the same quantity of stimuli ; was up and dressed ; and, with the exception of this extremely slow pulse, was apparently well.

Dec. 25th. Pulse 40. On this day she was ordered the acetated tincture of iron, and small doses of tincture of Spanish flies. Continued the spirits ; ten ounces daily.

Dec. 26th, pulse 42 ; 27th, 52. Took six ounces spirits. 28th, 29th, and 30th, 80.

After this date all remedies were laid aside, and she was discharged on the 6th January, the pulse being then 68.

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